External Review

of

Mine Reclamation and

Environmental Protection

Under the

Mines Act and *Waste Management Act*

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Submitted To:

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and
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EXTERNAL REVIEW OF LIABILITY PROVISIONS FOR MINE RECLAMATION AND ENVIRONMENTAL PROTECTION UNDER THE WASTE MANAGEMENT ACT AND MINES ACT

EXECUTIVE SUMMARY

(1) Introduction

The purpose of this report is to review the liability provisions regarding mine site contamination under the *Mines Act*, and under Part 4 of the *Waste Management Act* ("*WMA*") and the Contaminated Sites Regulation (together, the "Contaminated Sites Provisions") with a view to ensuring they meet environmental protection objectives while encouraging a sustainable mining industry.

The issues discussed in this report arise for two fundamental reasons:

- Firstly, there are two different regimes administered by two different ministries relating to the regulation of contamination at mine sites - the *Mines Act* regime administered by the Ministry of Energy and Mines ("MEM") and the Contaminated Sites Provisions administered by the Ministry of Environment, Lands and Parks ("MELP")[1].

- Secondly, most mining activity will inevitably create a "contaminated site" as that term is defined in the *WMA*. Consequently, contrary to other industries, a mining company cannot conduct its business without becoming subject to joint and several liability under the Contaminated Sites Provisions.

In the course of preparing this report, it became apparent that the liability issues are inextricably linked to the administrative regime contained in the Contaminated Sites Provisions. We have therefore also considered administrative issues in this report.

We have interviewed representatives of MEM and MELP and a number of other stakeholders from industry, environmental groups and First Nations. We have also reviewed the relevant legislation, and background documents provided to us by the two ministries.

(2) Conclusions

Based on these interviews and reviews, we have concluded that:

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[1] This problem is compounded because there is a third "regime" which can be used to deal with contamination of mine sites – sections 31 and 33 of the *WMA* providing for pollution abatement and pollution prevention orders.

- The environment will, in most cases, be protected adequately through MEM's exercise of its powers under the *Mines Act*.

- However, relying solely on the *Mines Act*, will likely result in contamination at a few mine sites not being dealt with or having to be dealt with by government.

- An exemption from liability under the Contaminated Sites Provisions for mines, will not, in itself, result in increased mining investment in British Columbia. However, such a change would be an important signal to the mining industry that British Columbia is interested in promoting an active mining industry and would, in conjunction with other reforms, promote increased mining investment in the province.

- An exemption from liability under the Contaminated Sites Provisions with respect to low risk sites, particularly small scale exploration sites, could be given without materially increasing the risk to the environment.

- There is no consensus among stakeholders, including mining industry representatives, regarding whether to relieve significant mining operations from liability under the Contaminated Sites Provisions. Nevertheless, there should be a process whereby, in rare circumstances, mining operations could be relieved from liability under the Contaminated Sites Provisions where significant social values can be achieved by doing so or where the environmental risks from such sites are not significant.

- The Contaminated Sites Provisions are hampering the "remining" and remediation of brownfield areas and, in this sense, are having a negative effect on the environment and mining activity.

- The provisions in sections 31 and 33 of the *WMA* providing for pollution abatement and pollution prevention orders create uncertainty for the mining industry which is not necessary given the extent to which those powers are duplicated in the Contaminated Sites Provisions.

- The overlap in the administrative processes under the *Mines Act* and the Contaminated Sites Provisions are a significant problem to the mining industry. There is no reason for the mining industry to be subjected to two administrative processes or conflicting requirements under those processes.

- There is a general willingness on the part of MEM and MELP, and most other stakeholders, to improve the system to encourage mining activity in British Columbia, provided that environmental protection is not reduced.

(3) Recommendations

Based on these conclusions, our primary recommendations are as follows[2]:

- *Sections 31 and 33*. Sections 31 (pollution abatement orders) and 33 (pollution prevention orders) of the *WMA* should not apply to the prevention and remediation of contamination at mine sites.
- *Small scale exploration on greenfield sites*. A company undertaking small scale exploration on a greenfield site should either be (i) exempted from liability under the Contaminated Sites Provisions or (ii) have its maximum liability limited to the remediation costs attributable to the company's activities.
- *Exploration of brownfield areas*. A company which undertakes small scale exploration on a brownfield area should be exempted from liability under the Contaminated Sites Provisions regarding the existing contamination.
- *Operating mines*. A company carrying out advanced exploration or full scale mining operations should be (i) exempted from liability under the Contaminated Sites Provisions upon obtaining approval of MEM and MELP or (ii) able to apply for an indemnity for liability in respect of contamination under the *Financial Administration Act*. Such exemption or indemnity will rarely be available.
- *Post-mining use*. A person who uses a mine site for the uses contemplated in the reclamation permit should be exempted from liability for the existing contamination at the site.
- *Good samaritan remediation*. A person who, acting as a "good samaritan", carries out remediation of an historic mine site with the approval of MEM and MELP, should be exempted from liability under the Contaminated Sites Provisions in respect of the site.
- *One-window approach to reclamation/remediation*. The Regional Mine Development Review Committee ("RMDRC") should be used to provide a one window approach for all decisions regarding mine site contamination issues.
- *Dispute resolution process*. If MEM and MELP cannot agree on an issue before the RMDRC, including whether enforcement proceedings should be taken, the dispute should be resolved through a joint ministry dispute resolution process.
- *MELP not to exercise powers*. MELP will not exercise its powers under the Contaminated Sites Provisions in relation to core mining contamination unless MEM agrees or the dispute resolution process results in a decision to exercise such powers.

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[2] These are summaries of our primary recommendations. Complete details of the primary recommendations and our other recommendations are in Part 7 of this report.

Our recommendations represent our judgment as to the best way to resolve the issues discussed in this report, based on the input of stakeholders and our review of the existing law. However, we acknowledge that there are many other acceptable options, or variations of the foregoing options, that could be chosen. We therefore recommend that comments from stakeholders regarding this report be considered before a decision is made regarding whether to proceed with any of our recommendations.

EXTERNAL REVIEW OF LIABILITY PROVISIONS FOR MINE RECLAMATION AND ENVIRONMENTAL PROTECTION UNDER THE *WASTE MANAGEMENT ACT* AND *MINES ACT*

PART 1 - INTRODUCTION

We have been retained by the Ministry of Environment, Lands and Parks and the Ministry of Energy and Mines to prepare a report regarding the environmental liability provisions applicable to mines under the *Waste Management Act* and the *Mines Act*.

The purpose of this report is to:[3]

> "... undertake a comprehensive review of the liability provisions for mine reclamation and environmental protection of land and water bodies affected by mining under the *Waste Management Act* and the *Mines Act*. This review will include identifying environmental liability issues related to mines permitted under the *Mines Act* including mineral exploration properties and how the current provisions impact the transfer of mining properties and business transactions.
>
> Recommendations will be developed to ensure liability provisions for mine reclamation meet overall environmental protection objectives of government and help encourage a sustainable mining industry."

The regulation of mining in British Columbia is primarily the responsibility of MEM under the *Mines Act* and the Health, Safety and Reclamation Code established under the *Mines Act* (the "Code"). In very general terms, the system established under the *Mines Act* and the Code is as follows:

- Mining activity is regulated by requiring that all work relating to a mine be subject to a *Mines Act* permit.
- Environmental liability for a mine site, including reclamation obligations, is borne by the current owner of the mine.
- The obligations of the owner are generally supported by security posted by the owner.
- Upon the sale of a mine, with the approval of the Chief Inspector, the existing *Mines Act* permit is transferred to the new owner. The new owner assumes environmental liability for the site and the prior owner's liability is extinguished. The new owner posts new security for its obligations and the prior owner's security is returned.

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[3] The complete terms of reference for this contract are contained at Appendix A.

MELP also plays a role in regulating environmental issues at mine sites under the *WMA* which contains prohibitions on the introduction of waste into the environment without a permit, spill reporting and spill mitigation requirements, regulations regarding special waste handling and pollution prevention and abatement orders. MELP's powers, and the liability regime under the *WMA*, changed significantly on April 1, 1997 when the *WMA* was amended by the addition of Part 4 (Contaminated Sites Remediation) and the Contaminated Sites Regulation ("CSR") under the *WMA* came into effect (together, the "Contaminated Sites Provisions"). These provisions:

- create a comprehensive regime administered by MELP to identify, investigate and remediate contaminated sites, including contaminated mine sites; and
- impose joint, several, absolute and retroactive liability for the costs of remediating a contaminated site on current and past owners and operators of the site, among others.

According to some stakeholders, the Contaminated Sites Provisions are not appropriate for dealing with mine sites and are having a negative effect on mining activities in the province, without materially improving environmental protection. Some stakeholders have proposed that mines be exempted from the Contaminated Sites Provisions so that environmental regulation of mine sites is carried out as it was prior to April 1, 1997. Consequently, this report has been commissioned to examine the implications of the application of Contaminated Sites Provisions to mine sites.

When reviewing this report, it is important to note the following:

- Defined terms in this report are set out in Appendix B. It is critical to an understanding of the report that the definitions be noted. In particular, the definitions of "brownfield area", "contamination", "contaminated site", "core mining contamination", "greenfield site", "mine", "mine site", "mining companies", "owner", "operating mine" and "small scale exploration" must be reviewed.
- The terms of reference for this report focus on liability issues. However, we have also considered administrative issues. We have done so for two reasons. Firstly, almost all of the stakeholders indicated that the administrative issues arising from the interrelationship between the *Mines Act* and the Contaminated Sites Provisions were a significant problem and, for several stakeholders, a more important problem than liability issues. Secondly, in considering how to deal with the liability issues, it became apparent that the liability and administrative issues were inextricably linked. For example, if mine sites were exempted from the Contaminated Sites Provisions, all of the administrative processes contained in those provisions would no longer apply. An analysis of the benefits of the exemption therefore must take into account whether this is appropriate. Further, the argument for an exemption under the Contaminated Sites Provisions is strengthened to the extent the administrative processes under the *Mines Act* give MELP an opportunity to provide input into the requirements imposed under the

Mines Act. Therefore, it is impossible to deal with the liability issues in isolation from the administrative issues.

- This report deals primarily with mine sites that currently have, or in the future will have, a permit under the *Mines Act*. It does not deal with liability regarding historic contaminated mine sites, except regarding liability for new exploration on such sites and the remediation of such sites by "good samaritans".
- The purpose of this report is to develop general principles on which to base specific changes to the regulatory regime for contamination issues at mine sites. Once the principles are agreed upon, detailed drafting of specific regulatory or policy changes will be required. This process will undoubtedly reveal additional issues that will need to be considered and that may require further changes.
- Although the *Mines Act* regulates coal and hardrock mineral mines, placer mines, sand and gravel pits and quarries, this report focuses on coal and hardrock mineral mines as these types of mines commonly result in more significant contamination than other types of mines.
- The recommendations presented in this report are based on our understanding of how the mining industry operates and is regulated, based on our interviews of stakeholders and our review of the relevant legislation and of various documents provided to us by the ministries and other stakeholders. To the extent that our understanding is incorrect or incomplete, the conclusions in this report may require amendment. Our recommendations will also need to be refined, or perhaps amended, as a result of responses to this report from those who actually work in, regulate or are concerned about the mining industry.

We wish to thank all of the stakeholders who assisted us with this report. Without exception, the stakeholders were knowledgeable, concerned and generous with their time. What was most impressive to us was the willingness of the stakeholders to recognize that there is more than one legitimate view of the issues discussed in this report and that these conflicting views must be considered in any recommendations.

We particularly wish to point out that this report has benefited from the proposals contained in the Joint Submission prepared by Karen Campbell, Glenda Ferris, Keith Ferguson, Walter Kuit, David Parker and Alan Young and by the work done by the CSIC Mining Subcommittee.

One final note: although the uncertainty regarding the respective responsibilities of MEM and MELP regarding mines has resulted in some issues between the ministries, in general, we were impressed by the goodwill and mutual respect between the ministries' staff. It is clear to us that both ministries are committed to working to ensure that British Columbia has an efficient and effective mine regulation process to encourage mining activity in British Columbia, without jeopardizing environmental protection.

PART 2 - BACKGROUND

In this Part, we discuss some general aspects of mining to provide a basis for the discussions in the balance of the report.

A. HISTORY OF ENVIRONMENTAL REGULATION OF MINES

Environmental protection has only been a part of mining legislation in British Columbia for approximately 30 years. Reclamation requirements for coal and hardrock mineral mines were first enacted in 1969[4] and for coal and mineral exploration sites in 1973[5]. Originally, bonds to secure reclamation obligations were limited to $1,000, and then $2,500, per hectare. This cap was not eliminated until 1990, when the *Mines Act* in its current form, with the accompanying Code, came into effect. Furthermore, recognition of metal leaching and acid rock drainage ("ML/ARD") as a significant environmental issue relating to mining in British Columbia has only occurred within the past decade or so. Consequently, a number of historic mine sites in the province are sources of significant environmental problems.

This report focuses on the legislation as it exists and is applied at the time of this report. Neither MEM nor the mining industry representatives have suggested that there be any exemption from the Contaminated Sites Provisions with respect to historic mine sites which are not subject to a current *Mines Act* permit.[6]

B. STAGES OF MINE DEVELOPMENT

The mining process involves a number of stages.[7] Some sites go through all of the stages; most never get past the exploration stage. Some operating mines have a life of many decades; others are played out or abandoned for other reasons after only a few years. Some come to life only once; others cease operating for short or long periods and then are reopened when metal prices, technological improvements or other changes make it profitable to operate once again.

The stages in the life of a mine will include some or all of the following:

- Exploration: This is the first stage in the life of a mine. Most mines never get beyond this stage. The process of exploring for minerals and coal is akin to finding a needle in a haystack. Therefore, significant exploration activity is required to find the very few sites at which operating mines will be established.

  There are several stages in the exploration process. Initially, promising areas are located and evaluated by studying geological maps, satellite images and aerial photographs. These areas are studied further through on-site field work to sample rocks or carry out tests to examine electromagnetic fields and electrical resistance of underground rocks. If these tests are successful, more detailed examinations of the rock may be conducted by digging trenches or drilling to obtain larger rock samples for metallurgical testing. Such exploration work may result in significant surface disturbance and, in the case of bulk sampling, the removal of large quantities of rock.

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[4] An Act to Amend the *Mines Regulation Act*, SBC 1969, c. 18; *Coal Mines Regulation Act*, SBC 1969, c. 3.

[5] An Act to Amend the *Mines Regulation Act*, SBC 1973, c. 131; An Act to Amend the *Coal Mines Regulation Act*, SBC 1973, c. 100.

[6] Such as Britannia or Mt. Washington (except in respect of the reuse of brownfield areas and the "good samaritan" remediation of such sites).

[7] The following paragraphs borrow from a publication of the Mining Association of British Columbia: "Mining: Who Needs It", Spring, 2000.

- Mine development: In the very few instances where exploration results in a decision to proceed with a mine, the next stage will be the mine development phase. Mine development includes the construction of facilities necessary for the operation of a mine. The facilities may include employee accommodations, access roads, maintenance and other shops and service buildings, an ore treatment mill and plant, a tailings impoundment (mill waste disposal facility) and a waste rock dump. Also during this phase, surface material is removed or tunnels are excavated to expose or provide access to the ore body or coal.

- Operating mine: During this phase, the ore body or coal deposit is excavated, waste rock that does not contain economic minerals or coal is separated and stored in a waste rock dump, the ore or coal is processed in the onsite treatment mill and plant and the waste from the milling and plant processes is deposited in a tailings impoundment.

- Closure: Reclamation is the process of returning the land and watercourses disturbed by mining to an acceptable alternate use. At many mines, reclamation is a continuous operation. As one part of the mine site is exhausted, it is reclaimed while other parts are opened; while one part of a waste rock dump is in active use, another part may be in the process of being reclaimed.

- Post-mining use: Final mine reclamation occurs when the land is returned to another use acceptable to the Chief Inspector. In British Columbia, acceptable uses are commonly forestry, grazing and wildlife. However, as urban areas expand, there will be more situations in which "urban" uses will be proposed for mine sites.

- New exploration: Closure of a mine may mean the end of the mine life cycle. However, a closed mine may be reopened for a number of reasons. Mines that are uneconomic at one time may become economic with increased metal or coal prices, or technological improvements which reduce mining costs. Changes in the political or regulatory climate may reduce the perceived risk of mining. A more efficient operator may decide that it can make money where an earlier operator could not. A new operator may not be interested in reopening the old mine but may believe that there is economic ore in an area close to the old mine. The vicinity of a former mine is often a promising area for additional discoveries. For all of these reasons, it is possible that closed mines might go through the exploration, development and operational stages more than once.

C. AREAS OF MINE SITES

Mine sites are commonly made up of three main areas:

- The area occupied by the facilities such as maintenance shops, storage buildings and accommodation complexes and, if the ore is to be processed on site, a mill (to break the rock into smaller fractions) and a plant (to extract metal out of the ore).
- The area of land disturbed in gaining access to and removing the ore body or coal deposit. The size of this area will vary significantly depending on whether the mine is an underground mine or a surface or open pit mine.
- The areas where the waste rock (rock which does not contain economic minerals or coal) and tailings (a slurry comprised of mill waste) are placed.

The primary focus of this report is on the second and third of these components - the areas disturbed by the removal of ore or coal and the waste rock sites and the tailings impoundments. These are the areas which are subject to core mining contamination.

D. ENVIRONMENTAL IMPACTS OF MINING

There are a number of potential environmental impacts from mining:

- All mining activity (other than early stage exploration work) will disturb the surface of the land. Such disturbance can range from minor disturbances associated with limited exploration programs, to massive disturbances in the case of large open pit operations. The disturbance may involve the removal of the productive surface soil or overburden to provide access to the ore or coal deposits; the destruction of vegetation and compaction or removal of soil to enable access roads and processing facilities to be constructed; and the covering of land with buildings and other facilities, waste rock sites and tailings impoundments. The disturbances will result in temporary or permanent reduction or destruction of the productive capacity of the land.
- The pits, waste rock sites and tailings impoundments (and other areas, such as access roads, where metal-bearing rock is exposed) will usually contain elevated metal concentrations. Without reclamation, these areas will usually not support significant vegetation because they lack soil and because of the high metal concentrations. Even if covered by clean soil, the elevated metal concentrations in these areas may be ingested by animals if the metals are taken up in the vegetation.
- Disturbance of the land surface and changes in drainage patterns may result in surface run-off of silt into watercourses.
- The most critical water quality impact from mining in British Columbia is metal leaching from waste rock sites, tailings impoundments, open pits and underground

workings. Metal leaching ("ML") can result from the chemical action of acidic or alkaline water on metal-laden rock. The most prevalent metal leaching issue in British Columbia is related to acid rock drainage ("ARD"). ARD is described as follows in the Mining Association of British Columbia publication "Mining: Who Needs It?":

> "ARD occurs naturally through the physical and chemical weathering of rocks that contain metal-sulphide minerals. When sulphide minerals are exposed to air and water, they chemically react to produce acid that can then dissolve the metals they contain. Runoff from these sites can contaminate watercourses and harm aquatic life... Activities such as building roads, clearing land and developing mines can duplicate and accelerate the weathering process by exposing sulphide-bearing rocks to air and water. Some metal deposits and some coal deposits are relatively rich in sulphide minerals and as such, ARD is a major environmental issue for the mining industry. Sources of ARD at mining operations can include runoff and seepage from waste rock and tailings."

Once an ML/ARD problem arises, it is difficult to solve.[8] ARD is primarily a concern at hardrock mineral mines, although coal mines can also create ARD.[9] ML/ARD can result in surface water and groundwater contamination.

- Ore extraction plants use chemicals such as cyanide and arsenic to extract minerals from ore. The delivery, storage, use and disposal of these chemicals raises the prospect of spills or other releases of the chemicals into the environment.
- Fuelling and equipment maintenance facilities at mine sites may also lead to the introduction of contaminants into the environment from spills or other releases of fuel, oils and other contaminants.
- The operation of mine mills and plants may result in air emissions.

This report focusses on contamination arising directly from the mining activity, that is, the high metal concentration in the pits, waste rock sites, tailings impoundments and other areas exposed by the mining operations and the ML/ARD which results from these areas.

E. TYPES OF MINES

The *Mines Act* regulates coal and hardrock mineral mines, placer mines, sand and gravel pits and quarries. This report focuses on coal and hardrock mineral mines because these types of mines commonly result in more significant contamination than the other types of mines.

There are two main types of mineral and coal mines: open pit and underground. Both metal and coal deposits can be mined using either method. Open pit mines involve the removal of surface soil and rock ("overburden") to expose the ore or coal. The rock containing the ore or coal is then removed. Rock containing economic concentrations of ore or coal is separated from the waste rock and soil for on-site or off-site processing.

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[8] Sierra Legal Defence Fund, "Digging Up Trouble", May 1998.

[9] BC MEM Policy Overview.

Underground mines are not as prevalent in British Columbia as open pit mines. Underground mines involve the construction of underground tunnels to access the target ore. They are more expensive to construct and operate than open pit mines and, therefore, are generally constructed only where the ore is at too great a depth to permit open pit mining.

Reclamation of mineral mines is often more difficult than reclamation of coal mines. Metal deposits are commonly mined by the development of a large, single pit. Coal mines, on the other hand, often follow shallow coal seams which can be more easily filled and reclaimed after they have been mined.[10]

F. RECLAMATION OF MINE SITES

Mining is intended to be a temporary use of land. Therefore the *Mines Act* requires that all mines be reclaimed after they cease operation. On larger sites, reclamation may be an ongoing process which is carried out continuously as portions of the workings, waste rock sites or tailings impoundments are no longer being used. Final reclamation is carried out upon completion of the mine. The *Mines Act* requires that a mine be reclaimed to a level of productivity equal to or exceeding prior use. However, if the owner of a mine can demonstrate to the Chief Inspector that this standard is impractical, the Chief Inspector may waive this requirement.[11]

Reclamation includes a number of activities such as:

- removing buildings and equipment;
- decommissioning roads;
- stabilizing pit walls, waste rock sites and tailings impoundments;
- constructing a permanent drainage system for the site;
- covering the site with soil; and
- revegetating the site.

The Code requires that reclamation include the implementation of a program to address ML/ARD. ML/ARD may be mitigated by eliminating the exposure of metal bearing rocks to the air. This may be accomplished by filling open pits and underground workings with water or by covering exposed rock with soil. If ML/ARD can not be eliminated by these strategies, the ML/ARD must be treated. An ML/ARD treatment system typically involves collecting the ML/ARD and passing it through lime to neutralize the acid.

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[10] BC Ministry of Energy, Mines and Petroleum Resources, "Mine Reclamation in British Columbia, Policy Overview", Sept. 1991.

[11] Code, s.10.6.4.

PART 3 - LEGISLATION AND ITS APPLICATION

There are a number of statutes which are applicable to the regulation of environmental issues arising from mining activity. For the purpose of this review, we focus on the key legislation dealing with contamination issues: the *Mines Act* and the *WMA*, including the CSR. We also comment briefly on the *Environmental Assessment Act ("BCEAA")*, the *Environment Management Act* and the federal *Fisheries Act*.

A. MINES ACT

(1) Introduction

MEM is the primary regulator of mines in British Columbia pursuant to its powers under the *Mines Act* and the Code. The Code has recently been amended by the inclusion of the new Mineral Exploration Code ("MX Code") as Part 11 of the Code. The *Mines Act* requires that mine owners comply with the detailed requirements of the Code.

(2) Permit applications

(a) *Statutory provisions*

The *Mines Act* regime for regulating mines, including the environmental impacts from mines, is based on a permit system. An owner[12] of a mine must obtain a permit under section 10 of the *Mines Act* before commencing any work regarding the mine[13]. This applies to both exploration activities and activities pertaining to operating mines. The Chief Inspector may exempt an owner from this requirement if the Chief Inspector "is satisfied that, because of the nature of the proposed work, it is not necessary to obtain a permit".[14] In an application for a *Mines Act* permit, the owner must file a plan of the proposed work and a program for the protection and reclamation of the land and watercourses affected by the mine.[15]

(b) *Process re exploration activities*

Details of the permit application process as it applies to exploration activities are set out in the MX Code. "Exploration activities" are defined in the MX Code to include activities undertaken in the search for, and development of, coal and minerals including activities such as drilling, trenching and excavating using machinery, disturbance of the ground by mechanical means and site reclamation. "Exploration activities" do not include activities which result in minor disturbance such as prospecting using hand held tools and hand trenching without the use of explosives.[16]

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[12] The *Mines Act* requires that the permit be applied for by the owner, the owner's agent or the owner's manager. For simplicity, we refer only to the owner in this report.

[13] *Mines Act*, s. 10(2).

[14] *Mines Act*, s. 10(2)

[15] *Mines Act*, s. 10(1).

[16] Code, s. 11.0.1

A person wishing to carry out "exploration activities" must submit an application for an Exploration Activities and Reclamation Permit, called a Notice of Work and Reclamation, to the regional office of MEM. The Notice has two parts – a form for general information regarding the applicant and schedules containing specific information regarding the proposed exploration activities. The schedules set out the location, nature, extent and duration of the exploration activities. One of the schedules requires that information needed to establish the necessary security be posted in respect of reclamation of the site. The MX Code sets out in detail the information that must accompany an application for an exploration permit, including information regarding unstable terrain, terrain with high erosion potential, streams, wetlands and lakes, community watersheds and drainage patterns.

The Notice of Work and Reclamation is reviewed by the MEM regional office and then circulated to MELP and other government agencies, affected First Nations and others who the district inspector determines have an interest in the application. MEM does not usually inspect a proposed exploration site before a permit is issued.

A district inspector[17] will issue an Exploration Activities and Reclamation Permit to the applicant if the inspector is satisfied that:

- the exploration program will be managed to ensure worker and public health and safety;
- the impacts on other resources have been identified;
- the impacts on the other resources will be in compliance with the MX Code; and
- the required reclamation security has been deposited.

(c) *Process re operating mines*

If required by the Chief Inspector, a permit application for the proposed development or expansion of a coal or hardrock mineral mine and for large pilot projects, bulk samples, trial cargos and test shipments must be accompanied by a detailed Mine Plan and Reclamation Program plan containing:

- particulars of the nature of the land and its present uses including reference to surface water and groundwater characteristics, vegetation, wildlife and land capabilities;

- particulars of the proposed or existing mine and the extent of the area to be occupied by the mine with reference to disposal of tailings, waste rock, overburden and other waste, prediction of acid generation, protection of watercourses including a prediction of effluent quality, drainage control and projections of disturbed areas over the life of the mine;

- a program for the protection and reclamation of the land and watercourses during the construction and development phases;

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[17] The Chief Inspector of Mines has delegated the authority to issue permits authorizing exploration activities to district inspectors.

- conceptual final reclamation plans; and
- an estimate of the total costs of outstanding reclamation obligations over the life of the mine including costs of long term monitoring.[18]

Permit applications will be processed differently depending on whether the proposed mine or mine modification triggers the *BCEAA* process (see discussion of *BCEAA* at page 39).

Applicants for a permit for a new mine which does not trigger the *BCEAA* process undergo a preliminary "approval in principle" process before proceeding to permitting. Under this process, the applicant files a document for review by the Regional Mine Development Review Committee ("RMDRC")[19]. The RMDRC may recommend approval in principle of the project based on the application document or may require additional information before giving approval. If the RMDRC recommends approval, the application proceeds to permitting.[20]

Applications for a permit for a major mine which triggers the *BCEAA* process are circulated to the RMDRC for review and comment for up to 60 days. If the RMDRC approves the application, the Chief Inspector may issue a permit containing such conditions as the Chief Inspector determines based on the recommendations of the RMDRC.[21] Permit applications for these projects may be submitted concurrently with the project report under *BCEAA*. A project approval certificate must be obtained under *BCEAA* before the Mines Act permit can be issued.

(d) *Applications for permit modification*

During the life of a mine, it is common for the terms and conditions contained in the mine's permit to be amended. In some cases, such modifications will trigger the *BCEAA* process requiring an assessment under *BCEAA*.

Regardless of whether *BCEAA* is triggered, a section 10 *Mines Act* permit will be required for the work. The process for reviewing this application will be same as for an application for a major mine which is subject to the *BCEAA* process discussed above.

(3) Security

(a) *Statutory provisions*

The Chief Inspector may impose a condition in a section 10 *Mines Act* permit that the owner provide security in the amount specified by the Chief Inspector for mine reclamation and to provide protection of, and mitigation of damage to, watercourses affected by the mine[22]. The Chief Inspector may increase or decrease the amount of the security.[23] If, upon closure of a mine, the Chief Inspector is satisfied that the conditions of the section 10 permit have been satisfied, the owner is entitled to a refund of the unused security, plus interest.[24]

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[18] Code, s. 10.1.2

[19] The RMDRC is discussed in more detail on page 18.

[20] Application Requirements for a Permit Approving the Mine Plan and Reclamation Program Pursuant to the Mines Act (March 1998)

[21] ibid

[22] *Mines Act*, s. 10(4).

[23] *Mines Act*, s. 10(5), (6).

(b) *Exploration sites*[25]

Security is taken with respect to practically all permits issued for exploration activity. In many cases the security is only $500, although it may be much higher for advanced exploration activities. The amount of the security is determined by MEM based on factors including the extent of the proposed disturbance, the risks to the environment and the financial strength and stability of the company carrying out the work. The security is usually taken in the form of term deposits.

When exploration of a site has been completed and the site satisfactorily reclaimed, MEM will return the security. MEM rarely inspects exploration sites and will sometimes return the security without inspecting the site, basing its decision to do so on the applicant's reputation and on site photographs provided by the applicant. However, MEM will always inspect a site at which bulk sampling has occurred before the security is returned.

(c) *Operating mines*

As outlined in 3(a) above, the Chief Inspector may require security in the amount and form, and subject to the conditions, specified.[26] Each year, the Chief Inspector may revise the security so that there will be funds available to ensure that all conditions of the permit and orders of the Chief Inspector relating to mine reclamation and the protection of watercourses are carried out over the life of the mine.[27] If the permit is not complied with or the reclamation program not carried out as required, the Chief Inspector may cancel the permit and apply the security toward the cost of having the work completed.[28]

MEM's policy is to determine reclamation and security requirements based on restoring the land and watercourses to at least the same level of productivity as existed prior to mining, protecting public health and safety, and managing potentially harmful discharges. MEM bases the calculation of the required security on reclamation carried out in a cost effective way while minimizing the risks that the province will have to fund reclamation.

Part 10 of the Code sets out the reclamation objectives to be secured by the security taken. Part 10 requires that a mining company submit an estimate of the total costs of outstanding reclamation requirements to the Chief Inspector. The amount of the required security is often a compromise between MEM's estimates of reclamation costs and the mining Company's estimates.[29] MEM has developed a Mine Reclamation Costing and Spreadsheet to assist it in the difficult task of estimating future reclamation costs.[30] MEM is also in the process of increasing the transparency of decision making about security requirements.[31]

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[24] Code, s. 10.5.3.

[25] According to MEM representatives.

[26] *Mines Act*, s. 10(4),

[27] *Mines Act*, s. 10(5),

[28] *Mines Act*, s. 10(8)

[29] The mining company's estimated costs of reclaiming a site will usually be significantly less than those of government which are based on hiring contractors to go onto a site to clean-up.

It is MEM's stated intention to move towards requiring full security [illegible] existing mines.[32] Full security is considered to be sufficient security to cover all anticipated costs of remaining reclamation work plus a risk premium. However, this goal has not yet been achieved. In some cases, the requirement for full security is delayed where enforcing such requirement may jeopardize the commencement or continuation of mining operations.

(d) *Mine Closure*

On closure of a mine, the mining company may apply for the return of its security plus interest. If the Chief Inspector is satisfied that the permit, including all reclamation requirements, has been complied with, the security will be returned. However, in cases where there are long term environmental risks, the security will be maintained to ensure long term health, safety and environmental protection objectives.

(4) Consultation

The Chief Inspector must establish an advisory committee and regional advisory committees to review applications for mine approvals and reclamation permits referred to them by the Chief Inspector.[33] At present, RMDRCs have been established for the Smithers, Prince George/Northern, Williams Lake, Kamloops/Okanagan, Cranbrook, Nanaimo and the Lower Mainland regions.

The membership of the RMDRCs is not mandated by the *Mines Act*. In practice, the Chief Inspector invites representatives from MELP, the federal Department and Fisheries and Oceans, other appropriate governmental agencies and affected First Nations to be on the committees. Members of the public are not generally members of the RMDRCs.[34]

The Chief Inspector has also appointed Public Advisory Committees ("PAC") with respect to the Equity, Brenda and Sullivan mines. These committees include members of the public as well as the relevant governmental agencies and First Nations representatives. The PACs are generally set up when the Chief Inspector believes that the issues relating to a mine are of significant public interest.

A representative of MEM is the chairperson of each RMDRC and PAC.

The Chief Inspector must send all applications for proposed, or major expansions or modifications of, coal and hardrock mineral mines, large pilot projects, bulk samples, trial cargos and test shipments, and may refer applications for coal and hardrock mineral exploration permits, to the applicable committee.[35] If an application regarding coal or hardrock mineral exploration is not referred to a committee, it must be circulated to the ministries and agencies specified by the Chief Inspector.

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[30] Version 3.5 1 January 2000.

[31] According to MEM representatives.

[32] Mine Reclamation Security Policy in British Columbia (February 1995) Ministry of Energy, Mines and Resources.

[33] *Mines Act*, s. 9.

[34] According to MEM representatives.

The committees must review applications referred to them and provide their recommendations to the Chief Inspector within sixty days.[36] Ministries and agencies receiving exploration permit applications which are not referred to a committee have thirty days to make written representations to the Chief Inspector regarding the applications.[37]

The Chief Inspector may also require that notice of a permit application be published in the Gazette and local newspapers specified by the Chief Inspector.[38] An interested person has thirty days to make written representations to the Chief Inspector.

The RMDRCs and PACs act in an advisory capacity, providing advice to the Chief Inspector regarding permit applications referred to them by the Chief Inspector. The Chief Inspector must take into consideration representations and recommendations received from an advisory or regional advisory committee, other agencies and ministries and affected or interested parties.[39]

Recommendations of the RMDRCs and PACs are commonly based on a consensus of their members. If a representative of MELP or any other agency proposes that a condition be added to a permit, MEM will rarely refuse to include that condition in the permit.[40]

(5) Inspections

A mine is subject to periodic inspections by MEM to assess compliance with its *Mines Act* obligations.[41] MEM inspections of operating mines usually focus on the core mining operations such as the state of the waste rock sites and tailings impoundments and worker health and safety issues. MEM will also inspect any on-going reclamation work. MEM inspects exploration infrequently.

(6) Transfer of permit

If a mine owner wishes to sell an operating mine, the owner must apply to the district inspector for consent to transfer its *Mines Act* permit. According to MEM representatives, the application will also be forwarded to the appropriate RMDRC or PAC for consideration. Prior to approving the transfer, the district inspector will:

- inspect the site to ensure that it is in compliance with the permit;
- consider the mining experience and financial capacity of the proposed purchaser;

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[35] Code, s. 10.3.1.
[36] Code, s. 10.3.2.
[37] Code, s. 10.3.3.
[38] Code, s. 10.2.1.
[39] Code, s. 10.4.1.
[40] According to MEM representatives.
[41] *Mines Act*, s. 15(1).

- reconsider the sufficiency of the amount of the security held by MEM based on the experience and financial capacity of the potential purchaser; and
- consider whether to amend the terms of the permit, including the reclamation plan.

Although not required to do so, the district inspector will take into account the comments of the RMDRC or PAC in determining whether to consent to the transfer of the permit and concerning the level of security required from the purchaser. The district inspector may attempt to improve the position of MEM, by obtaining increased security, at the time a permit transfer is requested.

(7) Environmental Protection and Reclamation

(a) *Environmental protection prior to reclamation*

The *Mines Act* contains a few references to environmental protection. The application for a *Mines Act* permit requires submission of a plan for the protection of the land and watercourses affected by the mine and the Chief Inspector may require security be posted for protection and mitigation of damage to watercourses affected by the mine.[42] Also, if work is necessary at a closed or abandoned mine to abate pollution, an inspector may cause work to be done to remedy the pollution.[43]

The Code contains a number of requirements pertaining to environmental protection, although most are contained in the MX Code which focuses on exploration sites:

- dangerous and potentially hazardous waste materials must be stored appropriately and spills of hazardous waste materials must be cleaned up as soon as possible (although these provisions focus on occupational health);[44]

- applications to conduct bulk sampling activities resulting in bedrock excavation of 1,000 tonnes or more must contain an ARD prevention program, all identified sources of ML/ARD must be treated or disposed of in a manner consistent with an approved management plan and the permittee must undertake monitoring programs to demonstrate satisfactory performance of the monitoring plan;[45] and

- applications for mines, or modifications or expansions of mines, require submission of plans including reference to waste disposal, prediction of and generation and protection of watercourses.[46]

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[42] *Mines Act*, s. 10(1) and (4).
[43] *Mines Act*, s. 17.
[44] Code, s. 2.4.3 to s. 2.4.7.
[45] Code, s. 10.1.2.
[46] Code, s. 11.10.

(b) *Reclamation standards*

An application for a permit to carry out any work in respect of a mine, including any exploration activity, must include a plan outlining a program for the reclamation of the land and watercourses affected by the work.[47] The reclamation standards are set out in section 10.6 of the Code (for exploration sites and mine sites) and section 11.8 of the MX Code (for exploration sites). A particular standard will not apply if it is specifically excluded in the applicable permit.[48] The reclamation standards will also not apply if disturbances created by the mining activity have been reclaimed, inspected and found to be satisfactory.[49] The reclamation standards include the following:

- The surface affected by the mine, including tailings ponds, impoundment structures and roads, must be reclaimed to an acceptable use that considers previous and potential uses of the land. The productivity of the reclaimed land must, on average, not be less than before the mining took place, unless the Chief Inspector accepts that it is impractical to meet this standard.
- The land, watercourses, waste dumps, haul roads and tailings impoundments must be left in a stable condition.
- The land must be revegetated to a self sustaining state using appropriate plant species. Vegetation must be monitored for metal uptake; if harmful metal levels are found in the vegetation, reclamation procedures must ensure that levels are safe for plant and animal life.
- Waste dumps must be reclaimed to ensure that water released from the dumps is of a standard acceptable to the Chief Inspector.
- Watercourses must be reclaimed to ensure long term water quality is maintained to a standard acceptable to the Chief Inspector.
- Drainage must be restored so that drainage will be sustained without maintenance.
- Pit walls constructed in overburden must be reclaimed in the same manner as waste dumps; pit walls constructed in rock or on steeply sloping footwalls are not required to be vegetated.
- If a pit is free of water, vegetation must be established in it; if the pit floor will hold water, provision must be made so that the productivity objectives are achieved for the body of water created.

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[47] *Mines Act.*, s. 10(1).

[48] Code, s. 10.6.2(2).

[49] Code, s. 10.6.2(3). The application of this exemption is unclear. It appears to provide the Chief Inspector with a very broad discretion to approve reclamation work even though it does not comply with the specified reclamation standards.

- Chemicals and reagents must be disposed of as directed by the Chief Inspector in compliance with applicable statutes.

- All potential acid generating material must be placed in a manner which minimizes the production and release of ML/ARD to a level that assures protection of environmental quality.

- Monitoring programs required by the Chief Inspector must be undertaken to demonstrate that reclamation objectives, including land use, productivity, water quality and stability of structures, are being achieved.

(c) *Reclamation of exploration sites*

The provisions in the MX Code which deal specifically with exploration sites require that reclamation of mechanically disturbed sites be carried out within one year of cessation of exploration unless the district inspector otherwise approves.[50] The provisions also deal with dismantling of camp sites, storage of drill cores, storage and handling of fuel drums and surface drainage.

If the exploration program is a multi-year program, an Annual Notice of Completion of Work must be submitted each year describing the actual exploration activities, including temporary reclamation measures. When the program is completed, any surface disturbance must be reclaimed and the permit holder must submit an Annual Notice of Completion of Work describing the exploration and reclamation activities undertaken. When the reclamation has been completed, the permit holder will give the district inspector a Notice of Mine Closure.

Many exploration sites do not result in material environmental issues because the sites do not involve significant land disturbances nor create ML/ARD issues. However, it is not uncommon for permit holders to leave garbage, equipment, fuel barrels and other debris at the site. MEM staff will sometimes clean-up sites, although MEM acknowledges that many of these sites are neither inspected nor adequately cleaned up. As well, the costs of cleaning up these sites will often not be covered by the minimum $500 bond often posted with respect to these sites. However, these sites generally involve housekeeping, rather than contamination, issues.

There are, however, more advanced exploration sites where there has been significant disturbance of the land or risks of ML/ARD or both. These sites require reclamation including coverage of disturbed areas, revegetation and measures to mitigate ML/ARD. The security regarding these sites is not released until the site has been inspected by MEM.[51] Generally, MEM is successful in having these sites cleaned up by the company without MEM having to call on the bond to pay for the clean-up.

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[50] MX Code, s. 11.8.1.

[51] According to MEM representative.

(d) *Reclamation of operating mines*

During the life of the mine, environmental protection and reclamation must be carried out[52]. When a mine owner decides to close its mine, the mine owner must complete the reclamation of the mine site pursuant to the requirements of its *Mines Act* permit. The owner must give the district inspector a notice of intention to close the mine. Once a mine is closed and reclamation requirements under the permit satisfactorily completed, the owner is entitled to a refund of its security. However, with respect to sites with long term contamination problems, or risks of contamination, the reclamation requirements under the permit may never be satisfied as ML/ARD treatment may be required virtually forever.

(8) Enforcement

The *Mines Act* contains the following enforcement powers:

- If an owner fails to complete a reclamation program or otherwise defaults under its *Mines Act* permit, the Chief Inspector may cancel the permit, order the owner to stop the mining operation and apply the owner's security towards payment of the costs of any required work.[53]

- If a mine inspector conducts an inspection of a mine, the inspector must complete an inspection report which must list infractions and order remedial action. If the inspector is of the opinion that a delay in remedying a hazard is dangerous to persons or property, the inspector must issue an order for immediate remedial action, suspend regular work or close the mine until remedial action is taken.[54]

- If work is necessary in or about a closed or abandoned mine in order to abate pollution, an inspector may cause work to be carried out to remedy the pollution. The cost of carrying out this work, plus interest, is a debt due to the government and forms a lien on the mine or mineral title in favour of the government.[55]

- If a mine is not being operated in accordance with the Code, an inspector may order the owner to comply with the Code. If that order is not complied with, the district inspector may apply to the B.C. Supreme Court for an injunction restraining the person from disobeying the order.[56]

A person who contravenes the *Mines Act*, the Code or an order made under them, commits an offence and is liable to a fine of not more than $100,000 or imprisonment for not more than one year, or both, plus a penalty of not more than $5,000 per day for every day that the offence continues after receipt of a notice of the offence from an inspector[57]. If a corporation commits an offence, a director or officer of the corporation who authorized, permitted or acquiesced in the offence is liable to a fine or imprisonment.

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[52] Code, s. 10.6.1

[53] *Mines Act*, s. 10(8).

[54] *Mines Act*, s. 15(4), (5).

[55] *Mines Act*, s. 17.

[56] *Mines Act*, s. 35.

[57] *Mines Act*, s. 37.

The area that is included in a "mine" and therefore subject to these enforcement powers is flexible. "Mine" is defined in the *Mines Act* as including not only the place where disturbance of the ground has taken place, but also a place designated by the Chief Inspector as a mine. Therefore, within reason, the power to designate an area as a mine would appear to give the Chief Inspector the power to deal with environmental impacts of a mine from spills and discharges that travel outside what would otherwise be considered a mine site.

The obligations and liabilities with respect to a mine rest with the owner of the mine. An owner is defined as every person who is the "immediate holder, proprietor, lessee or occupier of a mine".[58] Consequently, liability with respect to a mine under the *Mines Act* rests with the current owner, rather than any previous owner or operator of the mine. A person who owns the surface rights to lands on which a mine exists but who is not the owner of the minerals or coal is not an owner.[59]

In practice, the owner will usually also be the permit holder and therefore liability can be said to pass with the permit for the mines.[60] If the owner wishes to sell its interest in the mine, the owner will apply to the Chief Inspector for approval of the transfer. If the Chief Inspector is satisfied with the current condition of the mine and the financial and technical capability of the new owner to meet its permit requirements, and if the new owner posts sufficient security in the opinion of the Chief Inspector, the permit will be transferred to the new owner and the previous owner will no longer be subject to liability under the *Mines Act*.

If the mine owner reclaims the mine site and otherwise satisfies the permit requirements and then surrenders its permit and its interest in the mine site, the owner will no longer have any liability under the *Mines Act* with respect to the site. Therefore, with respect to sites with potential for future or long term environmental problems, MEM will not accept a permit for cancellation in order to maintain the mine owner's liability in respect of the potential problems.

(a) *Appeals*

The *Mines Act* provides for appeals from decisions of a district inspector to the Chief Inspector.[61] The Act does not provide for appeals from decisions made by the Chief Inspector.

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[58] *Mines Act*, s. 1.

[59] *Mines Act*, s. 1.

[60] Note however that the *Mines Act* does not prevent an owner from selling its interest in the mine without obtaining approval to a transfer of the section 10 permit. In such case, a question is raised as to whether environmental liability rests with the new owner, the prior owner as the permit holder, or both.

[61] *Mines Act*, s. 33.

B. *WASTE MANAGEMENT ACT* (OTHER THAN CONTAMINATED SITES PROVISIONS)

(1) Introduction

MELP has a number of powers that can be used to regulate, and impose liability regarding, mine sites. Each of the powers discussed in this section (other than the powers regarding spill response actions pursuant to section 12.1 of the *WMA*) were available to MELP prior to the Contaminated Sites Provisions coming into force.

(2) Discharge permits

The discharge of a waste into the environment resulting from the development or operation of a mine requires a permit issued by MELP[62]. Typically, an operating mine will need a permit for air emissions and effluent discharges from the plant and mill and for discharges from the mill into the tailings impoundment.[63] Through these permit requirements, MELP has the power to ensure that standards are met regarding emissions and effluent discharges from mining operations, including ML/ARD discharges. The *WMA* permitting provisions grant broad powers to MELP. For example, permit conditions may require a permittee to collect and treat acid releases, monitor groundwater quality, undertake hydrogeological assessments of current and potential future impacts and to grant financial security. Failure to obtain a required permit, or to comply with the terms of a permit, is an offence under the *WMA*[64]. The obligation to obtain and comply with these permits rests with the current operator of the mine.

Of particular importance, the permits give MELP the opportunity to control the effect of mining operations on groundwater and the quality of water which enters watercourses. Therefore, if there is an ML/ARD issue with a site while it is in operation, MELP has the power to order the mine owner to cease discharging the effluent or to cancel the mine's effluent permit which, in most cases, will result in the shut down of the mine, and to charge the current mine owner or operator. However, if the permit holder does not have the financial ability to solve an effluent problem, MELP cannot use its permitting authority to cause prior owners or operators to fix the problem. The principles of joint, several, retroactive and absolute liability apply only to the powers to deal with contamination set out in the Contaminated Sites Provisions.

MELP inspections usually focus on the mines' compliance with its air emissions and effluent permits and related water quality issues, and with issues such as chemical use and storage and fuel storage and fuelling areas. MELP's inspections regarding local watercourses may reveal previously unknown ML/ARD issues at the site. If MELP discovers ML/ARD entering watercourses, MELP will require that the problem be addressed. MELP will also become involved if there is a significant release of a contaminant, such as a fuel spill, requiring remediation.

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[62] *WMA*, s. 3.

[63] Permits are not required by MELP for the deposit of waste rock on a mine site, although such deposits appear to be contrary to the *WMA* in the absence of a permit.

[64] *WMA*, s. 54.

Permits cannot be transferred without MELP approval.[65]

(3) Spills

The Minister of Environment, Lands and Parks may order a person who has possession, charge or control of a polluting substance[66] to carry out investigations, to prepare a contingency plan and to conduct work to lessen the risk of an escape or spill[67]. A person who prepared a contingency plan can be ordered to put that plan into effect. This power could be used by the minister to lessen the risk of an escape of, for example, ML/ARD from a mine site. Such an order could not be made against a prior owner or operator of the site unless that person had previously prepared a contingency plan pursuant to a minister's order and was required by the minister to put the contingency plan into effect.

The *WMA* also contains a relatively new provision[68] to deal with spills that have occurred and which pose a hazard to health or the environment, or where there is an imminent threat of a spill that may pose such a hazard. "Spill" is broadly defined in this section to mean the intentional or unintentional introduction of a substance into the environment other than as authorized by the *WMA*. This definition would likely cover the introduction of waste rock and ML/ARD into the environment. In such a case, the government may take steps to clean up or otherwise deal with the spill and require the person who had possession, charge or control of the substance to pay the costs of the spill response action. Although not free from doubt, this section might authorize the government to require a prior owner or operator of a mine site to pay the costs of dealing with waste, such as tailings, of which the prior owner or operator had possession, charge or control either when it was first introduced into the environment or at a later time.[69]

(4) Pollution abatement and prevention orders

The *WMA* gives managers significant powers to deal with pollution or the threat of pollution through the issuance of pollution abatement orders under section 31 or pollution prevention orders under section 33. "Pollution" is defined as the presence in the environment of substances or contaminants that substantially alter or impair the usefulness of the environment.[70]

A pollution abatement order may be issued if the manager is satisfied on reasonable grounds that a substance is causing pollution. The order can require a number of things, including work to abate and remediate the pollution. The order may be issued against any of the following persons:

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[65] *WMA*, s. 14(1)

[66] "Polluting substance" means any substance whether gaseous, liquid or solid, that could, in the opinion of the minister, substantially impair the usefulness of land, water or air if it were to escape into the air, or were spilled on or were to escape onto any land or into any body of water." *WMA*, s.12(1)

[67] *WMA*, s. 12.

[68] *WMA*, s. 12.1, in effect July 28, 1997.

[69] The Code also deals with spills. Section 2.4.7 of the Code provides that spills of hazardous waste must be cleaned up as soon as possible.

[70] *WMA*, s. 1

> "(a) the person who had possession, charge or control of the substance at the time it escaped or was emitted, spilled, dumped, discharged, abandoned or introduced into the environment;
>
> (b) the person who owns or occupies the land on which the substance is located or on which the substance was located immediately before it was introduced into the environment;
>
> (c) a person who caused or authorized the pollution."[71]

A manager may issue a pollution prevention order where the manager is satisfied on reasonable grounds that an activity or operation has been or is being performed by a person in a manner that is likely to release a substance that will cause pollution of the environment. The order may require the construction and alteration of works necessary to prevent the pollution. The order may be issued against any of the following persons:

> "(a) a person who previously had or now has possession, charge or control of the substance;
>
> (b) a person who previously did anything, or who is now doing anything, which may cause the release of the substance;
>
> (c) a person who previously owned or occupied, or now owns or occupies, the land on which the substance is located."[72]

C. CONTAMINATED SITES PROVISIONS

(1) Introduction

The Contaminated Sites Provisions, which came into force on April 1, 1997, provide MELP with significant new powers to deal with contaminated sites, including contaminated mine sites.

In very general terms, the new *WMA* regime consists of the following elements:

- a definition of a contaminated site based on numeric standards for soil and water;
- a process for identifying contaminated sites;
- a process for remediating contaminated sites to prescribed standards either through remediation orders or prohibiting the issuance of a development related approval until the site is remediated; and
- imposition of joint, several, absolute and retroactive liability for the costs of remediating a contaminated site on persons defined as "responsible persons".

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[71] *WMA*, s. 31(1).

[72] *WMA*, s. 33(3).

(2) Definition of contaminated site

A contaminated site is defined in the Contaminated Sites Provisions as land or water which contains "a special waste, or another prescribed substance in quantities or concentrations exceeding prescribed criteria, standards or conditions."[73] "Special waste" means dangerous goods[74] that are no longer used for their original purpose, PCB wastes, wastes containing pest control products, leachable toxic waste, waste containing tetrachloroethylene and waste containing polycyclic or aromatic hydrocarbon.[75]

The prescribed substances other than special waste and their applicable quantities or concentrations are set out in Part 5 of the CSR. These prescribed substances are the substances listed in Schedules 4, 5 and 6 of the CSR and any other substances determined by the Director. The applicable concentrations of the prescribed substances in soil depend on the current or potential use of the site (agricultural, urban park, residential, commercial or industrial), and the applicable concentrations of the prescribed substances in the water on, or flowing from, the site depends on the use of the water (aquatic life, irrigation, livestock or drinking water). A coal mine or non-ferrous metal mine is considered an "industrial" land use[76] for the purpose of determining the applicable soil standard. The applicable use of water on or flowing from a mine site will depend on the facts of each case although, most commonly, the applicable use will be "aquatic life." The applicable concentrations of each substance for each land or water use are specified in Schedules 4, 5 and 6 of the CSR, or, for substances which are not listed in the Schedules, as determined by the Director. Alternatively, the applicable concentrations may be determined based on the specific characteristics of a particular site. These standards are referred to as "site specific numerical standards".

Notwithstanding the foregoing, a site is not a contaminated site if the soil or water does not contain any substance in a concentration greater than local background concentrations of the substance.[77] A MELP representative has advised that MELP takes the position that this exemption does not apply to contamination at a site such as a mine site where there has been surface disturbance even though the contamination is at concentrations consistent with local background concentrations.

(3) Identification of contaminated sites

(a) *Site profile*

Identifying and bringing contaminated sites into the *WMA* process is usually triggered by the requirement to submit a "site profile". In most cases, a site profile is a prescribed document (in the form attached as Schedule 1 to the CSR) which contains a list of questions intended to elicit responses which will give an indication of possible contamination. If a response to a question in a site profile indicates that contamination is a possibility, the profile will be forwarded to a manager at MELP and may result in the manager requiring a site investigation and ultimately the remediation of the site.

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[73] *WMA*, s. 26(1).

[74] As defined in s. 2 of the *Transportation of Dangerous Goods Act* (Canada).

[75] Special Waste Regulation, s. 1(1).

[76] *CSR*, s. 1 and s. 11(4)(b).

[77] *CSR*, s. 11(3).

The normal triggering events requiring submission of a site profile are applications to an approving officer for approval of a subdivision or applications to a municipality for zoning, a development permit or development variance permit, removal of soil or a demolition permit. If such an application is made, a site profile must be submitted if the applicant knows, or reasonably should know, that the subject property is or was used for a certain listed industrial or commercial activities, including coal or nonferrous metal mining.[78] In many cases, the triggering events relating to applications to a municipality will not apply to mine sites as they are commonly located outside municipal boundaries.

The more common trigger for the submission of a site profile regarding a mine is set out in section 26.1(4) of the *WMA* which requires that a site profile be provided to the district inspector by a mine owner if the owner:

> "(a) applies for a permit or for revisions to conditions of an existing permit under section 10 of the *Mines Act*, or
>
> (b) gives notice of intention to stop work in, on or near a mine before abandonment in accordance with the Health, Safety and Reclamation Code for Mines for British Columbia prepared under the *Mines Act*."

The Chief Inspector may not approve an application for, or for revision of, a *Mines Act* permit, unless a site profile has been submitted under this section. However, for the purposes of section 26.1(4)(a), a site profile is defined merely to be the information in the application for the permit or for the revision to the permit and, for section 26.1(4)(b), as the information provided in the notice of intention to stop work. Therefore, the requirement for submission of a site profile does not involve creation of an additional document.

Applicants for most exploration permits are exempted from submitting a site profile because no site profile is required if the mine is not capable of producing more than 10,000 tonnes of ore annually.[79]

In addition, a mine owner is not obliged to submit a site profile if the site is the subject of a reclamation permit under the *Mines Act*, provided the owner has no reason to believe there is contamination at the site which is not otherwise addressed in the permit.[80] The scope of this exemption is unclear. The *Mines Act* does not define "reclamation permit". Most permits issued under the *Mines Act* contain reclamation requirements. If these permits are considered "reclamation permits" for the purposes of this section, this exemption will apply with respect to most, if not all, operating mine sites throughout the life of the mine. The alternative interpretation is that a reclamation permit is the permit issued to authorize the final reclamation of a mine site, in which case the exemption is less significant.

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[78] *WMA*, s. 26.1(1); CSR, Schedule 2.

[79] *CSR*, s. 4(10).

[80] *CSR*, s. 4(1)(c).

Upon receipt of a site profile, the district inspector must decide within 15 days whether it has been completed properly, notify the person who provided it if it was not satisfactorily completed and, if it is completed properly, forward it to the site registry.[81] The district inspector is not required to forward the site profile to MELP as is the case with most other site profiles. However, the manager has a residual power to require a person to submit a site profile if the person owns or occupies land which may be a contaminated site.[82]

These rather complicated provisions raise some question regarding the role site profiles play in respect of mine sites. Site profiles are not required to be submitted in respect of many exploration and mines sites, those that are submitted will not likely provide any new information regarding contamination at the sites and, in any case, the profiles are not sent to MELP.

(b) *Site investigations*

Within 15 days of receiving a site profile pursuant to section 26.1(4) of the *WMA*, the district inspector must decide whether a preliminary site investigation will be required and notify the person who submitted the site profile of this decision.[83] The *WMA* does not expressly provide the district inspector with the power to order a preliminary or detailed site investigation. This process may have been delegated to district inspectors pursuant to section 28.3(3) of the *WMA* as contemplated in draft MOU #1.[84] We have not confirmed whether such delegation has taken place. However, it is not clear when a district inspector would exercise this power given that a district inspector will most likely use the *Mines Act* to deal with mine site issues.

A manager may order a preliminary and then a detailed site investigation of a mine site whether or not the manager has received a site profile. The manager may do so if he reasonably suspects that the mine site may be a contaminated site or contain substances that may cause, or threaten to cause, adverse effects on human health or the environment.[85] A required site investigation must be carried out at the mine owner's expense.

(c) *Determinations of contaminated sites*

A manager may determine whether a site is a "contaminated site".[86] Prior to making a final determination that a site is a contaminated site, the manager must make a preliminary determination and then notify certain parties, including a district inspector who has forwarded a site profile regarding the site to the manager, of the preliminary determination. A district inspector receiving such notice has an opportunity to comment on the preliminary determination. The manager must then make a final determination as to whether a site is a contaminated site and advise the interested parties, including the district inspector, of the determination.

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[81] CSR, s. 6(2).

[82] *WMA*, s. 26.1(9)(a).

[83] CSR, s. 7(3). The time to respond may be extended to 30 days if the district inspector requires more information.

[84] See definition in Appendix B.

[85] *WMA*, s. 26.2(1).

[86] *WMA*, s. 26.4.

(4) Liability for remediation

(a) *Responsible persons*

A remediation order may be issued against a "responsible person". A responsible person is:[87]

> "(a) a current owner or operator of the site;
> (b) a previous owner or operator of the site;
> (c) a person who
>   (i) produced a substance, and
>   (ii) by contract, agreement or otherwise caused the substance to be disposed of, handled or treated in a manner that, in whole or in part, caused the site to become a contaminated site;
> (d) a person who
>   (i) transported or arranged for transfer of a substance, and
>   (ii) by contract, agreement or otherwise caused the substance to be disposed of, handled or treated in a manner that, in whole or in part, caused the site to become a contaminated site;
> (e) a person who is in a class designated in the regulations as responsible for remediation."

In addition, a person is a "responsible person" if the person is a current or former owner or operator of, or a "producer" or "transporter" in respect of, a site from which the contaminating substance migrated.

This broad definition of "responsible person" is narrowed somewhat by a number of exemptions from responsibility set out in the *WMA*[88] and the CSR[89]. Relevant exemptions in the context of mines sites include (the following numbering refers to the applicable subsection of *WMA*, s. 26.6(1)):

> "(e) an owner or operator who owned or occupied a site that at the time of acquisition was not a contaminated site and during the ownership or operation the owner or operator did not dispose of, handle or treat a substance in a manner that, in whole or in part, caused the site to become a contaminated site;
>
> ...
>
> (h) a person who provides assistance or advice respecting remediation work at a contaminated site in accordance with this Act, unless the assistance or advice was carried out in a negligent fashion;
>
> ...
>
> (j) an owner or operator of a contaminated site containing substances that are present only as natural occurrences not assisted by human activity and if those substances alone caused the site to be a contaminated site;

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[87] *WMA*, s. 26.5.
[88] *WMA*, s. 26.6.
[89] CSR, Part 7.

…

> (l) a person who was a responsible person for a contaminated site for which a conditional certificate of compliance was issued and for which another person subsequently proposes or undertakes to
> (i) change the use of the contaminated site; and
> (ii) provide additional remediation."

A person seeking to benefit from any exemption must prove their entitlement to the exemption on a balance of probabilities.[90]

(b) *Liability principles*

A responsible person in respect of a contaminated site under the Contaminated Sites Provisions is absolutely, jointly, severally and retroactively liable to any person or government body for the reasonably incurred remediation costs at the site.[91] Therefore, unless able to benefit from an exemption, or a designation as a minor contributor, each person associated with a mine who falls within the definition of responsible person is liable for the full costs of remediating the mine regardless of how long ago they were associated with the mine and whether, and the extent to which, they contributed to the contamination. Liability is imposed regardless of whether the contaminating activity was carried out in accordance with the law or pursuant to a permit. The extent to which a party exercised due diligence will not excuse them from liability (although it may have an effect on an allocation of liability among responsible persons).

(c) *Minor contributors*

A responsible person may apply to the manager for a determination that the person is a minor contributor. In order to qualify as a minor contributor, the person must show that:

> "(a) only a minor portion of the contamination at the site can be attributed to the person,
> (b) either
> (i) no remediation would be required solely as a result of the contribution of the person to the contamination at the site, or
> (ii) the cost of remediation attributable to the person would be only a minor portion of the total cost of the remediation required at the site, and
> (c) in all circumstances the application of joint and several liability to the person would be unduly harsh."[92]

Designation as a minor contributor has significant benefits. A minor contributor is not jointly and severally liable for all remediation costs. A minor contributor is only responsible for the portion of the remediation costs the manager determines is attributable to the minor contributor.

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[90] *WMA*, s.26.6(b).
[91] *WMA*, s. 27(1).
[92] *WMA* s. 27.3(1).

(d) *Allocation of liability*

Although liability under the Contaminated Sites Provisions is joint and several, the provisions contemplate allocation of the remediation costs among responsible persons in a remediation order[93] or through a cost recovery action[94].

There is provision for the establishment of an allocation panel to provide non-binding opinions on, among other things, the share of the remediation costs attributable to a responsible person's contribution to the contamination.[95] The information to be considered by the allocation panel provides some guidance regarding the factors applicable to allocating liability among responsible persons. The information includes the amount and degree of toxicity of the substances causing the contamination, the relative involvement of the responsible persons in the generation, transportation, treatment, storage or disposal of the contaminating substances, the relative degrees of diligence exercised by the responsible persons with respect to the contaminating substances and the degree of cooperation of the responsible persons with government officials.[96] In a cost recovery action, allocation factors which must be considered include the foregoing factors plus the price paid for the contaminated site by the person seeking cost recovery, any remediation measures implemented by the parties and "other factors relevant to a fair and just allocation".[97]

However, although allocation of liability is possible, each responsible person may, nonetheless, be liable for all remediation costs because of the joint and several liability principle, if the other contributors no longer exist or do not have the financial capacity to contribute.

(5) Site remediation

(a) *Remediation options*

Contaminated sites may be cleaned up pursuant to a voluntary remediation agreement,[98] through independent remediation[99] or pursuant to a remediation order[100].

- Voluntary remediation agreement: A voluntary remediation agreement is an agreement between the manager and a responsible person which sets out, among other things, the financial or other contributions to be made by the responsible person, the security to be provided by the responsible person and a remediation schedule. A voluntary remediation agreement discharges the responsible person from further liability under the *WMA*.

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[93] *WMA*, s. 27.1(2)(b); CSR, s. 34(1)(a).

[94] *WMA*, s. 27(4); CSR, s. 34(1)(b).

[95] *WMA*, s. 27.2.

[96] *WMA*, s. 27.2(3).

[97] CSR, s. 35(2). This section states that these factors are to be considered when determining "the reasonably incurred costs of remediation" in a cost recovery action. It would seem that they are more appropriately considered factors to be considered in allocating liability among responsible persons.

[98] *WMA*, s 27.4.

[99] *WMA*, s. 28.

[100] *WMA*, s 27.1.

- Independent remediation: A responsible person can independently remediate a site without MELP involvement. However, independent remediation is not totally outside MELP review. A responsible person must notify the manager on initiating independent remediation and when the remediation is complete.[101] During the independent remediation process, the manager has the right to inspect the remediation to determine regulatory compliance, issue a remediation order, order public consultation or impose any other requirements that the manager considers necessary to achieve remediation.

  Reclamation of a mine site which involves remediation of contamination appears to constitute independent remediation under the Contaminated Sites Provisions, requiring notice to a manager.

- Remediation orders: The manager may issue a remediation order requiring any responsible person to undertake remediation of a contaminated site, to contribute in cash or in kind to another person who has incurred remediation costs and to provide security.[102]

  In deciding who to name in a remediation order, the manager must take into account private agreements between responsible persons respecting liability for remediation to the extent feasible without jeopardizing remediation requirements.[103]

  A person subject to, or receiving notice of, a remediation order may not knowingly do anything that diminishes the assets which could be used to satisfy the remediation order, unless they obtain the consent of the manager. It is not contrary to this prohibition to sell assets, including inventory, for fair value.[104]

(b) *Selection of remediation options*

Section 28.2 of the *WMA* directs those undertaking remediation to give preference to permanent solutions to the "maximum extent practicable". The person must take into account the potential for adverse effects on human health or pollution of the environment; the technical feasibility and risks associated with various options; the remediation costs and the potential benefits and effects of the options.

(c) *Timing of remediation*

The manager can determine whether remediation should begin promptly.[105] In making this decision regarding a mine site, the manager must consult with the Chief Inspector regarding the requirements of any reclamation permit.[106] The manager must also consider the adverse effects on human health and the environment and the likelihood of responsible persons not acting expeditiously or satisfactorily in implementing remediation.

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[101] *WMA*, s.28(2).

[102] *WMA*, s. 27.1(1), (2).

[103] *WMA*, s. 27.1(4). This section includes other limitations on the broad power to issue a remediation order against other responsible persons.

[104] *WMA*, s. 27.1(7); CSR, s. 37.

[105] *WMA*, p. 27.1(3).

(d) *Remediation standards*

A contaminated site may be cleaned up to the numerical standards set out in the CSR or to risk based standards.[107]

Numerical standards for soil are either generic standards, matrix standards or site specific standards. In addition, the Director may establish a standard for a substance for which no generic or matrix standard is specified. The generic standards are the most conservative standards as they are intended to be applicable to all sites. Matrix standards are less conservative as they take into account some site specific factors. Site specific standards are the least conservative and most flexible numerical standards as they are derived specifically for the site in question. Numerical standards for water are either generic or site-specific standards. The applicable numerical standards are based on the applicable use of the site and water.

Notwithstanding the prescribed standards, a site will be considered to be satisfactorily remediated if the soil and water do not contain a substance with a concentration greater than or equal to the local background level of that substance.[108]

Pursuant to the risk-based approach, contaminants at concentrations above numerical standards may be left on site. The site will be satisfactorily remediated if human risk standards recommended by the local medical health officer are satisfied.[109] If local background concentrations of a substance result in the human risk standards being exceeded, the remediation standard will be the risk standards which result from exposure of a human to the local background concentration of the substance.[110]

A person wishing to proceed based on risk-based standards must also submit an environmental impact report which identifies potential onsite and offsite environmental impacts of the contaminating substances. A manager may require that the risks identified in the report be prevented or mitigated.[111]

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[106] *WMA*, s. 27.1(3)(d).

[107] CSR, s. 16.

[108] CSR, s. 17(2)(b). The requirement that there not be any substance with a concentration equal to local background levels appears to be an error. Note the similarity between this provision and the exemption from being a responsible person provided in s. 26.6(1)(j).

[109] CSR, s. 18(1).

[110] CSR, s. 18(5).

[111] CSR, s. 18(7).

(e) *Approvals in principle and certificates of compliance*

The manager may issue an approval in principle which states that a remedial plan for a site has been approved by the manager.[112]

Once a site is remediated, the manager may issue a certificate of compliance if the site has been remediated to numerical standards. The manager may issue a conditional certificate of compliance if the site has been remediated in accordance with risk based standards and environmental impact requirements and information regarding the remediation and substances left on site is recorded in the site registry. In addition, if required by the manager, a monitoring plan must be prepared and works installed to implement the plan, the responsible person must register a restrictive covenant against the land, and security must be posted for the management of substances remaining on site.[113]

When deciding to issue an approval in principle, certificate of compliance or conditional certificate of compliance, the manager is required to consider whether permanent solutions have been given preference to the maximum extent practicable.[114]

A certificate of compliance will usually be inapplicable for mine sites which will most likely be remediated to risk based, not numerical, standards.

If mines were exempted from all of the Contaminated Sites Provisions, it would not be possible for a mining company to obtain an approval in principle or conditional certificate of compliance regarding remediation of mine contamination under the *WMA*.

(6) Financial security and covenants

As part of a remediation order, a manager may require a responsible person to post security in the amount and form, and subject to the conditions, the manager determines.[115] Financial security may also be required as a condition of the manager issuing an approval in principle, a certificate of compliance or a conditional certificate of compliance.[116, 117]

Financial security may be required if a significant risk could arise from a contaminated site because the site is not remediated or is remediated using risk based standards and requires ongoing management and monitoring and if a restrictive covenant is unlikely to be an effective means of ensuring remediation is carried out if required.[118]

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[112] *WMA*, s. 27.6(1).

[113] *WMA*, s. 27.6(3).

[114] *WMA*, s. 28.2(2).

[115] *WMA*, s.27.1(2).

[116] *WMA*, s.27.6; CSR, s. 50. It is unclear as to when the manager could justify requiring security in respect of a certificate of compliance since a certificate of compliance will only be issued if numerical standards are met.

[117] MELP, through CSIC, is in the process of developing a new policy for security required by a manager under the Contaminated Sites Provisions.

[118] CSR, s. 48(4).

(7) Cost recovery action

The *WMA* creates a new cause of action which enables a person who has cleaned up a site to recover the reasonably incurred costs of remediation from other responsible persons.[119] Costs of remediation are broadly defined to include costs of preparing site profiles, investigations, legal and consulting fees and fees imposed by government bodies.[120]

The section could be used by an existing mine owner to recover clean-up costs from prior owners and operators of the mine. If an exemption from the Contaminated Sites Provisions were given for mine sites, these statutory causes of action would not be available.

(8) Contaminated soil relocation

A person may not move contaminated soil from a contaminated site without entering into a contaminated soil relocation agreement.[121] A contaminated soil relocation agreement is entered into between the manager, the owner or operator of the receiving site and a responsible person regarding the site from which the soil will be removed. The manager will only enter into a soil relocation agreement where the soil being moved is suitable for the receiving site and its existing and future uses.

(9) Public consultation

The manager may require a responsible person, at its cost, to provide for public consultation regarding, or public review of, proposed remediation.[122] To this end, the manager may require posting a notice of the proposed remediation, publishing in local newspapers a notice of availability of relevant information, serving a notice of availability of relevant information on parties who may be adversely affected, holding public information meetings and using other public consultation methods.[123] In determining whether to order consultation or review, the manager may consider such factors as the size of the site, the nature of the contamination, the potential for human exposure, the impact of the contamination on the environment and whether there is offsite migration.[124] The manager also may consider the extent to which public consultation has already taken place. Therefore, a manager may decide that it is not necessary to order public consultation for mine site remediation where a Public Advisory Committee has been appointed under the *Mines Act*.

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[119] *WMA*, s. 27(4).

[120] *WMA*, s. 27.

[121] *WMA*, s. 28.1. A soil relocation agreement is not required if the deposit of the soil at the receiving site is authorized by a permit, approval, order, waste management plan and operational certificate or the regulation. *WMA*, s. 28.1(5).

[122] *WMA*, s. 27.5(1).

[123] CSR, s. 55.

[124] *WMA*, s. 27.5(2).

The *WMA* also provides opportunities for public involvement by providing:

- access to information about sites through posting of information on the site registry;[125]
- an opportunity for "any person" to comment on a preliminary determination;[126]
- notice of a final determination to any person who commented on the preliminary determination;[127]
- for public community-based consultation facilitated by the local medial health officer to develop recommendations regarding the acceptable level of human health risk for the site, consider remediation options, etc., where a risk assessment approach to remediation is undertaken;[128]
- for appeal to the Environmental Appeal Board by an aggrieved person of any decision by a manager, director or district director under the Contaminated Sites Provisions.[129]

(10) Fees

The Contaminated Sites Provisions provide for the payment of fees by responsible persons for most actions or activities undertaken by MELP.[130] For example, fees must be paid if MELP reviews a site investigation report or a remediation plan, enters into a soil relocation agreement or issues a conditional certificate of compliance. The fees vary depending on the size of the site and whether the contamination at the site is considered simple or complex.

(11) Site registry

A site registry has been established to provide information generated under the Contaminated Sites Provisions, including information regarding site profiles, site investigations, voluntary remediation agreements, pollution abatement orders, remediation orders, notifications of independent remediation and certificates of compliance.[131]

D. ENVIRONMENTAL ASSESSMENT ACT

The construction of a new mine or modification of an existing mine, if over a specified size,[132] will trigger the provincial environmental assessment process under the *BCEAA*.[133] If triggered, the *BCEAA* requires proponents to obtain a project approval certificate prior to commencing work. The *BCEAA* process will apply to significant mines and modifications of existing mines.

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[125] *WMA*, s. 26.3.

[126] *WMA*, s. 26.4(2)(c).

[127] *WMA*, s. 26.4(2)(c)(v).

[128] CSR, s. 18(2)(b).

[129] *WMA*, s. 44(1).

[130] CSR, s. 55.

[131] *WMA*, s. 26.3.

[132] A new coal mine will be a reviewable project under *BCEAA* if the facility will have a production capacity of 250,000 tonnes or more of coal per year. Modification of an existing coal mine facility will constitute a reviewable project if the existing facility satisfies the foregoing criteria and the proposed modification will result in the lesser of (i) a disturbance of 750 hectares of land and (ii) the disturbance of an area of land that is 50% or more of the land previously permitted for disturbance by mining activity. A new mineral mine will be a reviewable project if the facility will have a production capacity of 75,000 or more tonnes per year. Modification of an existing mineral mine facility will constitute a reviewable project if the existing

In order to obtain a project approval certificate, the proponent must submit detailed information regarding, among other things, environmental conditions in the vicinity of the project; the potential effects of the project[134]; the measures that the proponent proposes in order to prevent or mitigate adverse effects and public information distribution activities and consultation activities undertaken or which will be undertaken by the proponent.[135] The information will be given to the project committee established under the Act.[136] The project committee includes representatives of the federal and provincial governments and any municipality or regional district in the vicinity of the project and any First Nation whose traditional territory includes the project site or is in the vicinity of the project.[137] With respect to mine applications, representatives from both MEM and MELP will be on the project committee.

A decision regarding the issuance of a project certificate may be made after submission of the initial application or after a more detailed review of the project upon submission of a project report or through a public hearing process before the Environmental Assessment Board. The decision to issue a project approval certificate at the application stage or the project report stage is made by the Minister of Environment and the Minister of Mines. If the matter is heard by the Environmental Assessment Board, this decision is made by Cabinet. The process involves opportunities for distribution of information to the public and public consultation.[138]

As a result of this process, any major new mines or major modifications to existing mines will require a detailed review of environmental impacts and the development, at the outset, of measures to deal with adverse environmental effects such as ML/ARD.

E. ENVIRONMENT MANAGEMENT ACT

The *Environment Management Act* provides broad powers to the Minister of the Environment to protect the environment, including the power to issue "environmental protection orders" and to require that "environmental emergency measures" be taken. If mine site contamination is having or could have a detrimental environmental impact, the minister may issue orders under these sections. The powers under the *Environment Management Act* require an order of the minister and is only used in exceptional cases.

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facility satisfies the foregoing criteria and the modification will result in the lesser of (i) the disturbance of 750 hectares and (ii) the disturbance of an area of land that is 50% or more of the land previously permitted for disturbance by mining activity (Environmental Assessment Reviewable Projects Regulation, Part 2).

[133] Such work may also trigger assessment under the federal *Canadian Environmental Assessment Act* (if both the federal and provincial legislation apply the assessment will be carried out under the *BCEAA* process as a result of an agreement to harmonize the process).

[134] "Effects" is defined in *BCEAA* to include environmental effects.

[135] *BCEAA*, s. 7.

[136] *BCEAA*, s. 9.

[137] *BCEAA*, s. 9(2).

[138] *BCEAA*, s. 14.

F. FISHERIES ACT

The *Fisheries Act* is the primary federal environmental statute applicable to environmental issues at mine sites. It prohibits the deposit of deleterious substances into water frequented by fish. It also prohibits the alteration or destruction of fish habitat without an authorization. Discharges of ARD into fish bearing streams, or unauthorized habitat alteration, resulting from mining activities could lead to charges under this Act against a current owner or operator.

PART 4 - ISSUES

The argument of those who wish to exempt mines from the Contaminated Sites Provisions has three primary components:

- The Contaminated Sites Provisions discourage mining activity in British Columbia, resulting in loss of jobs, tax revenues and other economic benefits.
- The Contaminated Sites Provisions are not necessary to protect the environment because the existing regime for regulating mines under the *Mines Act* effectively achieves that goal.
- The Contaminated Sites Provisions actually result in negative impacts on the environment in certain circumstances.

Those who do not want mines exempted argue that regulation of mining under the *Mines Act*, without the back-up of the Contaminated Sites Provisions, will not adequately protect the environment.

In this Part, we will consider some of the issues raised by these contrary positions. This discussion forms the basis for our recommendations in Part 7.

A. DO THE CONTAMINATED SITES PROVISIONS DISCOURAGE MINING ACTIVITY?

(1) Disincentives to mining activity

The proponents of exempting mines from the Contaminated Sites Provisions submit that the liability scheme in the Contaminated Sites Provisions is a disincentive to mining in British Columbia, with the consequential negative economic and social impacts from losses of jobs, tax revenues and other economic activity.

The disincentives are of two types - a disincentive to investment in mining in British Columbia and a disincentive to the transfer of specific mining properties.

(a) *Disincentive to investment*

Some mining industry representatives indicated that liability under the Contaminated Sites Provisions is one reason that British Columbia has a reputation for being unfriendly to mining. As a result, mining companies are inclined to invest in jurisdictions other than British Columbia.

It is beyond the scope of this report to conduct an economic analysis of the actual effects of liability under the Contaminated Sites Provisions on mining investment in the province. However, we have concluded that, in themselves, these provisions do not play a significant role in dampening mining investment within the province. This conclusion is based on statements by a number of mining industry and MEM representatives who acknowledge that the investment climate for mining in British Columbia is determined by many issues, a number of which are more significant than the issue of liability under the Contaminated Sites Provisions. These issues include taxation, aboriginal land claims, security of tenure and the increased costs resulting from the administrative overlap between MELP and MEM. Therefore, we have concluded that merely exempting mines from liability under the Contaminated Sites Provisions will not, in itself, materially increase mining activity in British Columbia.

However, the Contaminated Sites Provisions do constitute one of a number of disincentives to mining investment in this province. Therefore, as part of a larger package of reforms, an exemption for mines from these provisions would likely have a positive impact on mining activity. The fact that it is just one disincentive of many does not mean that it should not be addressed.

(b) *Disincentive to property transfers*

Disincentives to specific property transfers apply at the different stages in the life cycle of a mine as follows:

- Exploration activity: A company may decide not to transfer its interest in an exploration site to another party which wishes to undertake further exploration out of concern that the company, as a "responsible person", will be liable for contamination arising from subsequent advanced exploration or mining activity over which it has no control. A company may also decide not to carry out exploration in the vicinity of a site which was previously an advanced exploration site or an operating mine out of concern that it will be liable for the existing historic contamination. Such decisions may be made even though the portion of any remediation costs attributable to the company would likely be small if the person who caused the contamination exists and is viable. However, mining companies, particularly larger companies, are concerned that they might be the only responsible person remaining with a connection to the site. Based on the principle of joint and several liability in the Contaminated Sites Provisions, they would then be liable for all remediation costs even though the contamination was not caused by them.

- Operating mine: An owner of an operating mine will be less inclined to sell the mine, particularly to a junior company, because it cannot monitor or control actions of subsequent owners. A subsequent owner may expand the mine, fail to maintain existing works or damage the existing reclamation and other mining works, all of which could increase the environmental liability of the previous owner. A decision not to transfer an operating mine may result in the mine ceasing to operate earlier than it would have if the owner had transferred the mine to a new operator who intended to revitalize the mine operation.

- Closed mine: An owner may decide not to transfer its interest in a closed mine in order to maintain control over the site and thereby avoid liability for risks arising from another party reopening the mine or carrying on other activities at the site. As discussed above, reopening the mine or carrying on other activities could increase contamination or result in damage to existing reclamation works. These fears may sterilize the land by preventing further exploration at the site, the reopening of the mine by a new operator or the use of the mine site for other economic activities.

- Post-mining use: The *Mines Act* intends that mining be a temporary use of land. Once the mining activity is finished, the land is to be returned to a productive use acceptable to the Chief Inspector. However, post-mining users may hesitate to use the land because they will thereby become jointly and severally liable for all mining contamination at the site.

These disincentives to the transfer of mining properties are particularly unfortunate since historic exploration sites and mine sites are often promising areas to explore as they have already been identified as areas of high mineral potential. To the extent that these sites are kept off the market because of liability concerns, the opportunities for finding productive mines in the province are reduced.

A number of the mining industry representatives indicated that the disincentives discussed in this section have had an impact on their company's willingness to transfer mining properties.

To some extent, the argument of the proponents of an exemption is undermined because, prior to the passage of the Contaminated Sites Provisions, sections 31 and 33 of the *WMA* provided for retroactive liability in certain circumstances. However, according to the mining industry representatives, it is only with the passage of the Contaminated Sites Provisions that the significance of retroactive liability came to the fore and had an effect on the decisions of mining companies.

(2) Limitations on impact of liability under Contaminated Sites Provisions

Liability under the Contaminated Sites Provisions is imposed on a very broad category of persons referred to as "responsible persons". However the ambit of this term is reduced, and hence the impact of the Contaminated Sites Provisions is ameliorated, by the provisions in the Contaminated Sites Provisions regarding exemptions from liability as a responsible person, minor contributor status and allocation of liability. The efficacy of these provisions will have an impact on the effect of the Contaminated Sites Provisions on mining companies and hence the willingness of mining companies to invest in the province and to transfer mining properties.

(a) *Exemptions from liability*

The Contaminated Sites Provisions are drafted to cast a wide net for responsible persons and then to provide specific exemptions to some parties caught in that net. There are two exemptions that are relevant in this context:

- Section 25.5(1)(e) of the *WMA* provides an exemption for a party that enters onto an uncontaminated site to carry on its business, and who carries on its business so as not to contaminate the site during its tenure. However, because mining, even if carried out to the highest standards, will usually result in a "contaminated site" as defined under the Contaminated Sites Provisions, this exemption will not be available to mining companies in most situations. Consequently, mining companies, unlike most other businesses, are not able to escape liability under the

Contaminated Sites Provisions by conducting their business to the highest standard.

- Section 26.6(1)(j) exempts "an owner or operator of a contaminated site containing substances that are present only as natural occurrences not assisted by human activity and if those substances alone caused the site to be a contaminated site."

  This exemption will be of assistance to a mining company which carries out non-intrusive exploration activity as the highly mineralized rock in the area will not have been "assisted by human activity". It is arguable that the exemption may also be available where intrusive activity has occurred. The metals in waste rock and tailings are naturally occurring substances. They have been brought to the surface by human activity but human activity did not cause the substances to be present on the site. However we believe the more likely interpretation of the section is that it does not apply where there has been any work involving land disturbance.

These exemptions in the Contaminated Sites Provisions are unlikely to be of assistance to mining companies in most circumstances.[139]

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[139] There are also provisions in the CSR dealing with "background concentrations" of substances that might provide an argument that a mining company should not be subject to the Contaminated Sites Provisions in certain circumstances.

CSR s. 11(3) provides that a site is not a contaminated site if it does not contain any substance with a concentration greater than the local background concentration of that substance. CSR s. 17(2) provides that a contaminated site is considered to have been satisfactorily remediated if it does not contain any substance with a concentration greater than the local background concentration of that substance.

Since waste rock and tailings are the waste left over after the more highly mineralized material has been extracted, it follows that they will likely contain lower metal concentrations than the rock from which they have been extracted. The question then is what are the applicable background concentrations at mine sites. "Background concentration" is defined as: "the concentration of a substance in an environmental medium in a geographic area, but does not include any contribution from local human-made point sources, determined by following protocols approved by the director under section 53 ". The director has developed a protocol for determining background concentrations (Protocol 4: Protocol for Determining Background Soil Quality).

S. 11(3) and s. 17(2) may not assist mining companies because the near surface concentrations of metals are lower than the metals in the waste rock and tailings which have been excavated from depth (the Protocol requires that testing of concentrations at the subject site and the local reference site should be at similar depths) or because the deposit of waste rock and tailings on a site constitutes a "contribution from local human-made point sources". If not, these provisions give a complete exemption from liability under the Contaminated Sites Provisions.

(b) *Minor contributor status*[140]

The minor contributor section in the *WMA* may limit the liability of a responsible person who contributed only a minor portion of the contamination at a contaminated site. If a company obtains a determination that it is a minor contributor, it will be liable only for its contribution to the contamination and will not be jointly and severally liable for all costs to remediate contamination caused by subsequent operations. If mining companies were confident that they could obtain minor contributor status where their contribution to any contamination was minor, this should go a long way to dealing with their concerns regarding exploration sites.

However the minor contributor section cannot be relied on by mining companies for three reasons. Firstly, a manager has a discretion as to whether to determine a person to be a minor contributor even if the person complies with the conditions in the section. It is not clear how the managers will exercise this discretion. Secondly, a person may not be named a minor contributor unless he can establish that "the application of joint and several liability would be unduly harsh". It is not clear in what circumstances it would not be considered unduly harsh to impose joint and several liability on a mining company which contributed only an insignificant part of any contamination. Thirdly, there is no direction as to what degree of contribution constitutes a "minor" contribution. Given these uncertainties, the minor contributor section, as currently written, does not provide adequate comfort to mining companies, particularly where a site is severely contaminated and there are no other viable responsible persons available to remediate the site.

(c) *Allocation*

The onerous consequences of joint and several liability may be ameliorated by the allocation processes contemplated in the Contaminated Sites Provisions. Although a mining company which carried out exploration work at a site will be jointly and severally liable for the costs of remediating contamination resulting from a mine constructed by a subsequent owner, most of such cost should be allocated to the subsequent owner through an allocation process.[141] However, the concern of the mining industry, particularly the major companies, is that the subsequent owner may not be available to pay for the amount allocated to it, leaving the original company to shoulder the full cost. Although this risk may be small, the spectre of such catastrophic consequences does have an impact on business decisions. In addition, significant legal costs will likely be incurred to participate in the processes leading to an allocation of costs.

(d) *Contractual indemnity*

Mining companies can reduce their risks under the Contaminated Sites Provisions through contractual arrangements. If an exploration or mine site is to be sold, the vendor could attempt to obtain an indemnity from the purchaser regarding all liability arising from past and future contamination of the site. This type of arrangement is common in all areas of business.

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[140] See discussion of the minor contributor section at p. 28.

[141] The Contaminated Sites Provisions provide for the allocation of liability by the manager or by the courts (CSR, s. 34). Liability can also be allocated under voluntary remediation agreements and through determinations of minor contributor status, discussed above.

However, a contractual indemnity is only as strong as the party giving the indemnity. In an industry which operates on the basis of transfer of sites between "majors" and "juniors", major mining companies will not put great reliance on indemnities from junior companies, particularly given the scale of the potential liability.

The contractual allocation of liability is a factor that the manager must take into account in considering who will be ordered to undertake remediation.[142] However, he need only do so "to the extent feasible without jeopardizing remediation requirements" and therefore the manager would likely ignore an indemnity granted by a small junior company.

* * * *

We conclude that, notwithstanding the limitations on the impact of the Contaminated Sites Provisions discussed in this section, the Contaminated Sites Provisions are keeping at least some promising sites "off the market" thereby reducing the potential for productive mines to be developed or operated. This applies most particularly to the effect of the provisions on exploration sites.

B. DO THE CONTAMINATED SITES PROVISIONS HAVE NEGATIVE IMPACTS ON THE ENVIRONMENT?

The Contaminated Sites Provisions may actually have negative effects on the environment on and around historic mine sites for the following reasons:[143]

- The Contaminated Sites Provisions may result in a former mine site not being considered for further exploration and mining due to liability concerns. This result is unfortunate because:
    - & the environment may be better served by "remining" areas that have already been disturbed by mining activity rather than disturbing pristine areas. It is better to develop mines on brownfields than greenfields. Therefore, from an environmental perspective, the reuse of historic mining areas should be encouraged, not discouraged; and
    - & the reopening of an historic mine may result in the improvement of existing conditions at the site. In the course of developing and working the mine, the new operator will likely carry out work which deals with some of the pre-existing environmental issues at the site.
- The Contaminated Sites Provisions may prevent a "good samaritan" mining company from voluntarily carrying out remedial work at an historic mine site in the vicinity of the mining company's existing mine. Some of the mining companies indicated that they would be prepared to do some limited remedial

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[142] *WMA*, s. 17.2(4)).

[143] This report focuses on mine sites which have current *Mines Act* permits. However, this section deals with issues pertaining to historic, unpermitted sites.

> work at historic mine sites for which they have no liability, provided that carrying out such work does not render them liable for the existing problems at the site.
>
> There are two exemptions which come close, but do not, or do not clearly, provide an applicable exemption for a "good samaritan". Section 26.6(1)(h) of the *WMA* provides an exemption from liability for a person "who provides assistance or advice respecting remediation work".[144] The Supreme Court of British Columbia has recently held that this exemption applies to any person that provides such assistance or advice, not just third party consultants.[145] However, it is doubtful that the exemption is broad enough to protect a mining company which actually carries out remediation work rather than merely providing assistance or advice.
>
> Section 24 of the CSR provides an exemption for a person who provides "contracting services" but the exemption only applies to the provision of services regarding "the construction of buildings and facilities at a contaminated site". "Facility" is defined in the *WMA* to include land. However it is doubtful whether all types of work carried out in remediating a site will constitute services regarding the construction of a facility. In addition, a "good samaritan" would not normally be carrying out its work as a contractor.

We conclude that there is a reasonable likelihood that the Contaminated Sites Provisions are having, or have the potential to have, some of the negative environmental impacts discussed in this section.

C. IS THERE A RISK TO THE ENVIRONMENT OF EXEMPTING MINES FROM THE CONTAMINATED SITES PROVISIONS?

Assuming that exempting mines from the Contaminated Sites Provisions will have some positive impact on the mining industry, the next question is whether there will be a material risk to the environment from granting such an exemption.

If an exemption were given, the environmental regulation of mine sites would revert to the situation in place prior to the Contaminated Sites Provisions coming into force on April 1, 1997. Prior to April 1, 1997, the *Mines Act*, the *WMA* permitting and spill provisions and sections 31 and 33 addressed contamination at mine sites. This section will consider the adequacy of the pre-April, 1997 regime.

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[144] This section is set out at page 32.

[145] *Beazer East, Inc. v. Environmental Appeal Board et al.* November 24, 2000, B.C.S.C., Vancouver Registry, L001898.

(1) Mines Act

(a) Mines Act enforcement powers

The *Mines Act* regime relies on the current owner of a mine to address environmental issues at the mine and ultimately to reclaim the mine. If the owner does not fulfil these obligations, the mine permit may be cancelled by the Chief Inspector and the owner ordered to shut down the mine operation. However, this power is of little value if the mine is no longer economically viable or the mine owner is defunct. It is also a power which MEM may hesitate to use as it will result in job losses and, likely, guarantee that a financially unstable mine owner will not be able to deal with the environmental issues at the site.

The Chief Inspector also has order powers under the *Mines Act* but some of these powers are quite specific thereby limiting their applicability. For example, the Chief Inspector may issue an order for remedial action but this power is limited to situations where a delay in remedying a hazard at the mine may result in a danger to people or property.[146] This power may not extend to issuing orders to deal with dangers to the environment. The Chief Inspector may cause work to be done at a closed or abandoned mine with funds out of the consolidated revenue fund. Any amount spent by the government becomes a debt due to the Crown and a charge may be placed against the land in respect of that debt. However, since the mine is closed or abandoned, the charge may have little value[147].

The broadest provision in the *Mines Act* allows the Chief Inspector to order an owner to comply with the Code where the "mine is not being operated in accordance with the provisions of the Code". The scope of this power is quite broad given the detailed requirements set out in the Code. It could also be used to address both on and off site issues related to the mine. Failure to comply with the order is an offence.[148] However, there are limitations to the effectiveness of this order power - the penalties for offences under the *Mines Act* are significantly lower than those under the Contaminated Sites Provisions; the effectiveness of the power is dependent on the financial strength of the owner; and the power will not apply to an abandoned mine as there is no "owner", as defined under the *Mines Act*.[149] There are also issues regarding the applicability of this order power where a permit remains outstanding regarding a site but where the holder of the permit has transferred all of its interest in the site to another company which is not carrying out mining at the site.

In summary, a comparison of the *Mines Act* to the Contaminated Sites Provisions suggests that the former could benefit from redrafting to enhance the effectiveness of its order powers.[150]

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[146] *Mines Act*, s. 15(5)

[147] *Mines Act*, s. 17(3)

[148] *Mines Act*, s.37(2)

[149] An abandoned mine is a mine with respect to which all permit obligations have been satisfied. Therefore, this limitation will only be material if a problem arises after the permit requirements have been satisfied.

[150] A detailed critique of other improvements to the *Mines Act* is beyond the scope of this report. However, in addition to the need to enhance the order powers, stakeholders have commented that:

- the Act should set out more clearly the Chief Inspector's mandate to ensure environmental integrity;
- some of the Chief Inspector's powers should be mandatory rather than discretionary;

However, any drafting changes will not change the fundamental fact that the order powers under the *Mines Act* will likely only be adequate where the mine is operating and viable or where the current owner is financially strong.

(b) Off-site impacts

The *Mines Act* gives the Chief Inspector some powers to deal with contamination from mining operations which escape from the immediate mine site area. The Chief Inspector has the power to require steps be taken on the immediate mine site to prevent further offsite discharges of ML/ARD and other contamination. The *Mines Act* specifically provides in section 17 that, if work is necessary in or about a closed or abandoned mine in order to abate pollution of land and watercourses affected by the mine, the inspector may cause work to be done to abate the pollution (although it is unclear from the section whether the abatement work can be carried out beyond the boundaries of the mine site).[151] Most significantly, the Chief Inspector has the authority to set the boundaries of a mine site since "mine" is defined to include "a place designated by the chief inspector as a mine."[152] Presumably the Chief Inspector could use this power to include an area contaminated by the mine operation which is outside the area actually being worked. Having said this, the *Mines Act* could benefit from some redrafting to remove any doubt as to the authority of the Chief Inspector to deal with any off-site contamination originating from the mine operations.

(c) Adequacy of security

As a result of the limitations of the order powers under the *Mines Act* discussed in section (a) above, the cornerstone of the *Mines Act* regime is the ability of MEM to take security as a condition of the issuance of a *Mines Act* permit. If the mine is not reclaimed or other environmental liabilities are not adequately addressed, MEM can use the security to pay for the required work.

MEM candidly acknowledges that, until relatively recently, security taken under the *Mines Act* was often inadequate. However, the MEM process for determining the amount of required security has become more sophisticated and rigorous over the past few years.

Nevertheless, a number of issues remain regarding the security taken under the *Mines Act*. For example:

- Adequate security is not posted with respect to several existing permitted mine sites.[153] Although the Chief Inspector has the authority to increase the amount of

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- there should be clear requirements for public notification and input;
- the roles of the RMDRC's, and MELP's role the RMDRC's, need to be clarified and statutorily protected; and
- requirements for security should be set out more clearly.

MEM acknowledges that some of these comments are legitimate and should be addressed

[151] *Mines Act*, s. 17.

[152] *Mines Act*, s. 1.

[153] Mine Reclamation Security Policy in British Columbia, February 1995, Ministry of Energy, Mines and Petroleum Resources.

security at any time, the Chief Inspector has, in certain cases, not exercised that authority where the mine owner is not financially capable of providing additional security. In these cases, the Chief Inspector may negotiate with the mine owner to get the best possible security jeopardizing a new mine project or causing an existing mine to shut down.[154]

- MEM will commonly accept less than complete security from mine owners which are viewed as financially strong. In such cases, the risk that reclamation work will not be carried out is low given the strength of the mine owner. However, risks remain, since MEM may misjudge the financial strength of a company. In addition, the fortunes of large companies can change - particularly over the long periods of time involved in dealing with sites with ML/ARD.
- Although it is MEM's policy to require full security where long term water treatment is required, this policy is not always adhered to by MEM.
- MEM does not always require security to cover the costs of repairs to or replacement of water treatment facilities.[155]
- Determining the amount of security to cover ML/ARD problems is very difficult because of the need to calculate costs over the long term and because the nature and scale of the ML/ARD problem may not be known for many years.

(d) MEM has conflicting responsibilities and focus

The mandate of MEM is to manage the development of British Columbia's mineral resources and to implement policies and programs to encourage mine development while maintaining environmental integrity.

This dual role – the promotion of a healthy mining industry and the maintenance of environmental integrity - places MEM in a conflict of interest. All mine development has some environmental impact. The degree of impact will be determined, in part, by decisions made in the discretion of the Chief Inspector. A decision which takes into account the health of the mining industry may result in greater environmental risk than would be allowed by a regulator focussed only on environmental protection. For example, as noted above under section (c), the Chief Inspector is sometimes willing to take less than full security so as not to cripple a mining operation. It is also to be expected that MEM, with its primary focus on, and its good relationships with, the mining industry, will have a different culture from MELP with its primary focus on environmental protection. This difference in culture will undoubtedly result in different perspectives and therefore different decisions. MEM has attempted to deal with its conflict position by giving some MEM staff specific environmental protection roles.[156]

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[154] For example, in one case, where a mine owner could not post the security requested by MEM, MEM accepted charges on equipment and buildings as security, even though the value of this security will reduce over time as the equipment and buildings depreciate.

[155] MEM will sometimes require security for replacement of capital components of water treatment facilities as part of the security obtained to cover regular maintenance items.

To be clear, we are not criticizing MEM for taking this approach which accepts that all economic activity involves some compromise of the environment. Nor does it suggest that the Chief Inspector is being lax in carrying out his mandate to protect the environment. In fact, more than one non-MEM stakeholder pointed out that, in certain cases, MEM has been more rigorous in protecting the environment than MELP. It is also readily apparent that MEM understands that the promotion of a healthy and sustainable mining industry requires that mining be carried out so as to maintain environmental integrity. However, there will undoubtedly be circumstances in which the interests of MEM in promoting mining will result in decisions which are less protective of the environment than if those decisions were made with environmental protection as the sole criteria. In addition, even if such were not the case, there will be a perception that the environment is not being adequately protected if MEM is the sole regulator of environmental issues at mine sites. This perception is reflected in the comments of several stakeholders who were concerned that mine development, not environmental protection, is the primary concern of MEM.

(e) Lack of expertise and resources

Many stakeholders, including some MEM representatives, expressed concern that MEM does not have the requisite expertise to adequately address all of the environmental impacts of mine sites. In general, MEM has significant expertise in dealing with ML/ARD, metal uptake in vegetation and revegetation of sites but requires the expertise of MELP in respect of water quality, wildlife and other receiving environment impacts. It was clear to all stakeholders that the expertise of both ministries is required to deal with contamination issues at mine sites. Many stakeholders noted that MEM also lacks sufficient staff to carry out its responsibilities. (The same comments were also made about MELP staffing.)

(f) Risks of mine sites

The contamination risks from mine sites range from inconsequential at exploration sites with minimal land disturbance to significant at large operating mines.

There is a difference of opinion among the stakeholders as to whether there would be an increased risk to the environment if, in general terms, the Contaminated Sites Provisions no longer applied to mine sites. However, there is consensus that much exploration activity does not pose a material risk of contamination and, consequently, that an exemption from the Contaminated Sites Provisions in respect of certain types of exploration sites would be acceptable.

Exploration work itself also encompasses activities which can have environmental impacts which range from immaterial to significant, in the case of certain advanced exploration. Therefore if an exemption from the Contaminated Sites Provisions is considered for exploration sites, it will be necessary to decide whether all, or only certain levels and types of exploration activity, should be exempted. The Joint Submission proposes different exemptions depending on whether the site is a greenfield or brownfield site and depending on the amount of excavated rock at the site.

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[156] According to MEM representatives.

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We conclude that, in most cases, the environment will be adequately protected under the *Mines Act* process. In particular MEM's process for taking security has substantially improved over the past decade and, as a result, the residual risk of unfunded environmental liabilities going forward has been reduced significantly. However, issues remain regarding MEM's security process and there will undoubtedly be situations in the future where the posted security will be insufficient to address environmental issues at a mine site. In addition, there will be significant opposition from environmental groups, First Nations and others if mines are regulated solely under the *Mines Act*.

Therefore, although MEM should remain the lead regulator of mines, and the *Mines Act* regime the primary process to deal with contamination issues at mine sites, MELP must continue to play a role in dealing with these issues.

(2) Waste Management Act

If it is determined that MELP should continue to have a role in dealing with contamination issues at mine sites, it does not necessarily mean that MELP needs to use the Contaminated Sites Provisions to play that role. MELP also has its permitting powers and the power to issue pollution abatement orders and pollution prevention orders under sections 31 and 33 of the *WMA*.

(a) Permitting powers

MELP's power to issue permits for discharges from mine sites provides substantial authority to address contamination issues. It can impose requirements that standards for discharges be met, including discharges of ML/ARD and other substances. MELP can also require the collection and treatment of discharges, the monitoring of discharges and water quality, and the undertaking of assessments of existing or potential impacts. MELP can also require that the applicant for a permit construct works and post security, as requirements of the permit. If, after issuing a permit, the manager believes that an amendment of the permit is required to protect the environment, the manager may, on his own initiative, amend the permit. An amendment can require that the permittee construct new works and change its method of discharging or handling waste. This gives the manager significant powers to deal with tailings impoundments and waste rock piles. MELP's permitting powers are particularly suited to dealing with ML/ARD. The primary limitation to these powers is that they only allow current owners to be required to address environmental issues.

(b) Pollution abatement and pollution prevention orders

The section 31 and 33 order powers raise two broad issues:

- Given the existence of sections 31 and 33, in particular their retroactive application, are the Contaminated Sites Provisions necessary to protect the environment? To put it another way, to the extent there is a gap in the environmental protection afforded by the *Mines Act* regime, is that gap narrowed sufficiently by the powers given to MELP under sections 31 and 33 so that the Contaminated Sites Provisions are not needed?

- Alternatively, given the existence of the Contaminated Sites Provisions, are the powers in sections 31 and 33 necessary to protect the environment?

Before responding to these questions, we will review the scope of sections 31 and 33.

(i) *What can be ordered?*

- Section 31: Pursuant to section 31, a manager may require, among other things, that a person undertake investigations, carry out work to control, abate or stop pollution and carry out remediation in accordance with criteria established by the Director. The definition of remediation is the same in this section as in the Contaminated Sites Provisions. Therefore, the scope of the order powers under section 31 and the Contaminated Sites Provisions is similar in many respects.[157]

- Section 33: Pursuant to section 33, a manager may require a person to do the same things as a person may be required to do under section 31, except that such work will be in relation to the prevention of pollution and, therefore, there is no power to order abatement or remediation of pollution. The powers under section 33 will, in some cases, be beyond the scope of the powers in the Contaminated Sites Provisions because (i) they may be exercised even in the absence of a contaminated site, a precondition to the issuance of a remediation order under the Contaminated Sites Provisions, and (ii) they focus on prevention of pollution whereas a remediation order focuses primarily on remediation of existing contamination. However, in the mining context, these differences may not be as pronounced as they first appear. Firstly, a mine site will usually constitute a contaminated site so that an order could be made regarding a mine under the Contaminated Sites Provisions in most situations where an order could be made under section 33. Secondly, although a remediation order focuses on remediation of existing contamination, any required remediation work will undoubtedly include work necessary to prevent pollution as well. For example, work carried out to remediate current ML/ARD will be designed to prevent future ML/ARD as well. Consequently , in the mining context, the distinction between the powers under section 33 and the Contaminated Sites Provisions will not, in most circumstances, be overly significant.

(ii) *Who can be ordered?*

- Section 31: Section 31 imposes liability on two categories of persons:

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[157] Although the scope of the order powers is similar in many respects, there are a number of differences in the detail as discussed on page 56.

& a person who had something to do with the contamination because they had "possession, charge or control" of the polluting substance when it was introduced into the environment (section 31(1)(a)) or who "caused or authorized" the pollution (section 31(1)(c)); or

& a person who currently owns or occupies the land on which the substance is located or from which the substance escaped.

Generally, therefore, section 31 imposes liability on the current owner and occupier of a site whether or not they had any involvement with the escape of the contaminant and on persons who had some involvement in causing the pollution. In this sense, liability under section 31 is more akin to liability under the Contaminated Sites Provisions than liability under the *Mines Act* which imposes liability only on the current owner of the site. However, the liability net is not as broad as under the Contaminated Sites Provisions. The primary difference is that section 31 does not impose liability on intervening owners or operators who did not have a role in causing the pollution.[158] However, this difference is not as pronounced in the mining context because of the nature of contamination at mine sites. For example, a person who created a waste rock pile would likely be liable both for the direct contaminating effects of the pile itself as well as for any ML/ARD which subsequently develops from the waste rock. A subsequent owner may not be liable for the direct effects of the waste rock because that person did not have possession, charge or control of the waste rock at the time it was first introduced into the environment. However, such "innocent" subsequent owner will likely be liable for any ML/ARD emanating from the waste rock during his tenure.[159]

- Section 33: The group of persons caught by section 33 is broader than the persons caught by section 31. For example, under section 33(3)(a), not only the person who had possession, charge or control of the polluting substance at the time it was introduced into the environment but also anyone who had possession, charge or control of the substance subsequently, is subject to a section 33 order. Similarly, under section 33(3)(c), any past owner or occupier of the lands on which the substance is located is caught. On a literal reading of section 33(3)(c), it would apply to owners of the property prior to any polluting substance being placed on the property and to intervening owners even if they had no involvement with, or knowledge of the presence of the polluting substance.

The scope of the persons caught by section 33 may be narrowed by the courts. For example in *British Columbia Railway Co. v. Driedger* 1988 BCJ No. 3053, affirmed on appeal, the current owner of the polluted land (B.C. Rail) was relieved of liability under the predecessor to section 31 on the basis that the legislature did not intend to impose absolute liability on an owner who had nothing to do with, nor any knowledge of, what had occurred. Subsequent to this decision, section 22 was amended by adding the predecessor to section 31(1)(c) which imposes liability on current owners. However, the general statement in the case may still be applicable. The same comment was made in an Environmental Appeal Board decision[160] in which the Board found that the predecessor sections to sections 31 and 33 are intended to capture only those who knew of the pollution or who benefited from it.

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[158] For example, in an Environmental Appeal Board decision, *Domtar Inc., West Fraser Timber and the Deputy Director of Waste Management*, EAB, 89/10, West Fraser Timber was relieved of liability under the predecessor to section 31, even though it was a tenant which was involved in carrying out work in respect of the contaminated area, because it did not have possession of the polluting substance at the time it escaped.

[159] ARD is a polluting substance: *Cominco and the Director of Waste Management*, EAB, 90/11

In general terms, more persons are likely caught under section 33 than section 31, and more persons are likely caught under the Contaminated Sites Provisions than under either sections 31 or 33 (although there may be circumstances where a person caught by section 31 or 33 is not caught under the Contaminated Sites Provisions because of the exemptions from liability in the Contaminated Sites Provisions). However, in most circumstances in the mining context, the group of persons caught by sections 31 and 33 will not usually be materially different from those caught under the Contaminated Sites Provisions.

(iii) *Nature of liability*

A central feature of the Contaminated Sites Provisions is that each responsible person is absolutely, retroactively and jointly and severally liable for all costs of remediating a contaminated site. Notwithstanding the joint and several liability principle, allocation of liability is contemplated under the Contaminated Sites Provisions.

Although not expressly stated, some or all of the principles of liability under the Contaminated Sites Provisions may be applicable to sections 31 and 33. For example:

- Liability under sections 31 and 33 is absolute, in that no due diligence defence is available to a person subject to a pollution abatement or prevention order.
- A person will be retroactively liable under sections 31(a) and (c) and sections 33(3)(a), (b) and (c).[161]
- A person named in an order likely will be jointly and severally liable for the costs incurred to respond to the order. This follows from the fact that any person within the categories of persons potentially subject to the order can be required to carry out all requirements of the order, even if other potential recipients of the order are not named in, or are not able to respond to, the order.

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[160] *Lamford Forest Products and Manning Jamison Ltd. and Deputy Director of Waste Management and Goodridge Peninsula Holdings Inc.*, EAB, Appeal No. 95/09(b)

[161] *West Fraser Timber Co. v. British Columbia*, [1998] B.C.J. no. 2127 (BCSC)

- The fact that more than one party can be named on an order suggests that the manager or the courts, or both, have a power to allocate responsibility for the costs of carrying out the terms of the order.

- The applicability of the foregoing principles of liability to section 31 orders may also arise from provisions in the Contaminated Sites Provisions. Section 27(1) of the *WMA* which sets out the liability principles applicable under the Contaminated Sites Provisions is stated to apply to any person who is "responsible for remediation of a contaminated site."[162] Under section 27.1(6), an order to remediate under section 31 can only be made to a responsible person in respect of a contaminated site. Therefore section 27(1) will apply to remediation carried out under section 31. Similarly a person who carried out remediation under section 31 would also appear to have the benefit of the cost recovery action in section 27(4) which provides that "any person who incurs costs in carrying out remediation at a contaminated site may pursue in an action or procedure the reasonably incurred costs of remediation from one or more responsible persons in accordance with the principles of liability set out in Part 4." The section is not limited to persons ordered to remediate a contaminated site under the Contaminated Site Provisions.

(iv) *Additional refinements of the Contaminated Sites Provisions*

The most obvious difference between the Contaminated Sites Provisions regime and the "regime" under sections 31 and 33 is that the Contaminated Sites Provisions contain detailed, specific processes, standards, public consultation requirements, exemptions from liability, limitations on liability, provision for the issuance of approvals in principle and conditional certificates of compliance and a number of other refinements to the process of dealing with contamination. None of these elements are contained in under sections 31 and 33. Consequently, a decision to rely on sections 31 and 33 rather than the Contaminated Sites Provisions, will mean that these refinements will not be available for the benefit of both the regulator and the regulated.[163]

In conclusion, in a particular circumstance there may be differences in the application of sections 31 and 33 and the Contaminated Sites Provisions. However, in the mining context, the two liability regimes provide substantially similar powers to MELP (although the section 31 and 33 powers lack many of the refinements of the regime under the Contaminated Sites Provisions). Therefore, we conclude that MELP would have materially similar powers to deal with contamination issues at mine sites as it does today if it had its powers under the Contaminated Sites Provisions but not its powers under sections 31 and 33, and vice versa.

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[162] *WMA*, S. 27(1). A person is responsible for remediation at a contaminated site is absolutely, retroactively and jointly and severally liable ... for reasonably incurred costs of remediation ...

[163] Note however that the standards under the Contaminated Sites Provisions could be incorporated for use in determining appropriate clean-up regardless of the regime under which remediation is regulated.

D. ADMINISTRATIVE AND MISCELLANEOUS ISSUES

(1) Administrative regime

To a number of mining industry stakeholders, liability is not the primary concern related to the Contaminated Sites Provisions. The more significant issues arise from the dual administrative regimes for dealing with contaminated mine sites under the *Mines Act* and the Contaminated Sites Provisions. The existence of two, unintegrated systems administered by two ministries may lead to unnecessary duplication and conflicting administrative requirements. For example:

- Security can be required under the Contaminated Sites Provisions and the *Mines Act* to secure remediation and reclamation requirements.
- According to mining representatives some of the requirements of the Contaminated Sites Provisions are not well suited to mine sites. For example, the primary purpose of preliminary and detailed site investigations is to provide information to determine whether a site is a contaminated site. A number of stakeholders commented that these are unnecessary steps given that mine sites will be contaminated sites. The problems related to the contamination can be determined more efficiently by a more directed investigation than a preliminary and detailed site investigation under the Contaminated Sites Provisions.
- Conflicting and duplicative requirements can be imposed by MEM and MELP under their respective powers. For example, a manager may require a site investigation even though the mining company has or is in the process of undertaking investigations required under its reclamation permit or has already commenced final reclamation of the site. This has apparently occurred at the Sullivan mine. As well, a manager can impose remediation requirements under the Contaminated Sites Provisions which differ from the reclamation requirements imposed under the *Mines Act*.

We conclude that there should be a "one window" approach to the reclamation/remediation of mine sites. The mining industry should not be subjected to more than one administrative process for dealing with these issues. The RMDRCs are an existing forum which is well-suited to carrying out a one-window approach.

(2) Security requirements

Financial security can be required under both the Contaminated Sites Provisions and the *Mines Act* to secure remediation and reclamation requirements.

MEM and MELP have entered into an agreement to provide a one window approach to deal with security for clean-up. The "Bonding Agreement Regarding the Joint Administration and Regulation of the Mining Industry" (August 1991) is directed at reducing duplication regarding security required from mines. The agreement predates the Contaminated Sites Provisions. The agreement provides that:

- MEM has the lead role in collecting and administering security;

- mining companies must post security before a reclamation permit will be issued;
- MELP requirements must be included in the security;
- MEM and MELP are to establish a formula for estimating the amount of required security; and
- the security is to be available to meet the requirements of both ministries and will not be released until the concerns of both ministries are met.

The agreement should be updated to refer to the Contaminated Sites Provisions and to clarify the legal basis upon which the security is available to MELP if required. However, it does reflect a reasonable approach to harmonizing the security requirements under the *Mines Act* and Contaminated Sites Provisions.

(3) Fees

Under the Contaminated Sites Provisions fees are charged by MELP for the review of reports and the issuance of decisions and other actions. The amount of the fee is based on the size and complexity of the site, and sometimes on the number of legal parcels comprising the site. Since mine sites are often large, complex sites, encompassing many legal parcels, the fees can be significant. Some mining companies complain about paying fees for reviews and other work done by MELP which duplicates work already done by MEM.

We understand that MELP is currently not charging mining companies fees under the Contaminated Sites Provisions regarding mine site contamination issues. It is unclear how MELP can exempt mine companies from the fees given that the requirement to pay fees is mandatory under section 18 of the Contaminated Sites Provisions.[164]

(4) Soil relocation agreements

The Contaminated Sites Provisions contain requirements regarding the movement of soil from a contaminated site to an off-site location. If mine sites are given a blanket exemption from the Contaminated Sites Provisions, these requirements will not apply to soil moved from a mine site to an offsite location. If mining companies are exempted, the requirements will still apply.

(5) Remediation standards

If mines are exempted from the Contaminated Sites Provisions, the remediation standards under the Contaminated Sites Provisions would not automatically apply to mine sites. However, to the extent it is determined that these standards are useful, they can be incorporated into the Code by reference.

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[164] CSR, s.9(17) "The manager may only exempt a person from paying fees for small-size simple sites if the manager believes that the payment of the fees would be an unmanageable financial burden on the person required to pay it."

(6) Risk assessment process

Many stakeholders pointed out that the risk assessment process under the Contaminated Sites Provisions is inappropriate for mine sites. However there is no alternative process focussing on mining risks either under the Contaminated Sites Provisions or the *Mines Act*. Most stakeholders regard this as an important issue to be addressed. We have been advised that MEM and MELP have agreed to engage a consultant to formulate a mine specific risk assessment process.

(7) Different approaches in regions

Some mining companies complain that the Contaminated Sites Provisions are administered differently depending upon which regional manager is involved. To a large degree, this is because managers have the discretion under the *WMA* to determine how to apply the Contaminated Sites Provisions. They are not under the control of MELP headquarters in exercising that discretion.

This discretion poses a difficulty in harmonizing the *Mines Act* and the Contaminated Sites Provisions through MELP policy. Although one would expect the managers to comply with MELP policy in most cases, they are not required to do so. In fact, the Environmental Appeal Board and the courts have held that a manager must exercise his discretion in making a determination, not merely follow MELP policy[165].

(8) Financial Administration Act

The *Financial Administration Act* ("*FAA*") provides that the government may give an indemnity if the indemnity is approved by the Minister of Finance and Corporate Relations or reviewed and accepted by the Risk Management Branch.[166]

This process has been used in at least one case involving a mine site to protect a mining company wishing to transfer its mine from liability regarding contamination issues upon transfer of the mine.[167] Under the process, a mining company can obtain an indemnity from the government so that if the mining company is named in a remediation order or sued under a cost recovery action it could call on the government to indemnify it from liability thereunder.[168]

There are at least three problems with this option. Firstly, the process, in effect, shifts obligations to carry out remediation and reclamation work to the taxpayers. This, in itself, is not necessarily a problem. An argument can be made that, in some cases, the economic and social benefits of giving the indemnity to ensure that a mine remains operating will far outweigh the risk that the government will need to spend some money on reclamation in the future. Secondly, there is a concern that the indemnity will be granted but the government will be slow to carry out any reclamation work if required to do so under its indemnity obligations. If this concern is justified, there is a potential risk to the environment from use of this process. Thirdly, all of the stakeholders who referred to the *FAA* process expressed concern over the lack of public participation and transparency in the process. MEM and MELP have entered into a protocol setting out guidelines governing when an indemnity should be granted. However the process and criteria need to be refined and publicized.

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[165] In *Rustad Bros. et al v. Deputy Director of Waste Management* (94/39, Sept. 27, 1995) the Environmental Appeal Board held that the regional manager had fettered his discretion in amending a series of permits by incorporating MELP policy. The Board ordered that the manager exercise his discretion in reconsidering the permit amendments. While it may be useful to have all of the regions uniformly applying the Contaminated Sites Provisions according to policy, this could be open to challenge.

[166] *FAA*, s.72(1); Guarantees and Indemnities Regulation, s.1

[167] The case involved the sale of the Boliden mine.

[168] The terms of the indemnity granted regarding the Boliden mine have not been made public. Therefore, we do not know whether it operates as set out in this paragraph.

There are advantages to the process Most importantly, it allows for a case by case evaluation of the risk associated with a particular site and a decision as to whether the increased risk to the taxpayer of granting the indemnity is outweighed by the benefits of doing so. Given the great variation in risks associated with different mine sites, this has advantages over a blanket exemption.

The *FAA* process also leaves the indemnified party as a responsible person, which may be made subject to a remediation order or be sued in a cost recovery action (for which they are to be indemnified by the government). As such, there is an increased likelihood that contamination will be dealt with than if a mining company or the mine site are merely exempted from the Contaminated Sites Provisions, thereby creating a gap in responsibility for the site. A blanket exemption also unfairly results in increased liability on other responsible persons in respect of the site. They will be obliged to pay the share which would otherwise be borne by the exempted party as a result of the joint and several liability principle. Finally, the scope of the indemnity can be crafted to suit the particular circumstances of each case. For example, the indemnity could be drafted to cover liability of any kind regarding contamination of a site (i.e., liability under the *Mines Act*, Contaminated Sites Provisions, sections 31 and 33, *Environment Management Act*, *Fisheries Act* and at common law) or the indemnity could have a narrower scope. It could also be drafted to deal with all types of contamination or only core mining contamination.

(9) Obligation or discretion to impose Contaminated Sites Provisions

Some proposals advanced to reduce duplication under the *Mines Act* and Contaminated Sites Provisions propose that the managers agree to refrain from exercising their powers under the Contaminated Sites Provisions. In this context, a question has been raised as to whether managers have the discretion not to impose the Contaminated Sites Provisions.

Managers are given the discretion whether to exercise most powers under the Act. For example, a manager has a discretion as to whether to require site investigations[169] and issue remediation orders.[170] The manager also has a discretion regarding whether to require financial security[171] and public consultation.[172] Of particular significance, in considering whether a person should be required to undertake remediation, a manager may determine whether to require that remediation begin promptly considering, in consultation with the Chief Inspector, the requirements of a *Mines Act* reclamation permit.[173] This provision was presumably included in the *WMA* to promote harmonization between the two regulatory regimes. A manager therefore has the discretion not to exercise his powers where the contamination is being adequately addressed under the *Mines Act* regime.

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[169] *WMA*, s. 26.2.

[170] *WMA*, s. 27.1(3).

[171] *WMA*, s. 27.1(2).

[172] *WMA*, s. 27.1(1).

In summary, there are very few examples in the Contaminated Sites Provisions where a manager is required to exercise the powers provided.

(10) Liability for off-site impacts

Some proposals have suggested that the Contaminated Sites Provisions should not apply to mine sites but that they should apply to off-site impacts from the site. It is not clear how such an exemption would assist mine companies with respect to their most significant concern, ML/ARD. Once the ML/ARD migrates off-site, the Contaminated Sites Provisions would apply to it. As such, any current or past owner or operator of the site would become liable to deal with the problem.[174] Therefore, if an exemption were given only for on-site issues, mining companies would continue to have a contingent liability under the Contaminated Sites Provisions in respect of ML/ARD migrating off-site.

(11) Change in land use

A mine is a temporary use of land. It will eventually be returned to some other use. An exemption for mines or mining companies under the Contaminated Sites Provision will have to take into account the impact on, and application of, such exemption in the context of such post-mining use.

For example, proposals have been made that exempt a mine site from the Contaminated Sites Provisions until the site is transferred for use for a non-mining activity. The problem with these proposals is that, upon such transfer, the Contaminated Sites Provisions will again apply to the site. At that time, the past owners and operators will again become jointly and severally liable in respect of the site. This does not achieve what those advocating an exemption are seeking; they will only have an exemption for as long as the site remains a mine site. If this approach is adopted, mining companies will have to accept that they have a contingent liability regarding the site which will spring back into life upon a change in use of the site.

One way to deal with this issue is to grant exemptions to mining companies rather than mine sites. Each time the mine is transferred, the new owner would assume liability for all past contamination and the past owner would be released from liability.

The liability regime regarding mines must also consider the position of post-mining users of the site. If the site becomes subject to the Contaminated Sites Provision upon a change in use to, say, forestry, the logging company then using the site will be jointly and severally liable for all mining contamination at the site (the plight of the logging company will be exacerbated if the exemption for the mine site is designed such that the liability of past owners and operators of the mine site does not spring back to life upon the change in use). As a result, the goal of putting the land back into productive use may not be realized if potential subsequent users fear liability for past mining contamination.

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[173] *WMA*, s. 27.1(3)

[174] Pursuant to *WMA*, s. 26.5(2), a current or past owner or operator of a site is responsible for contamination which migrated from the site.

One way to deal with this problem is to require the last permittee at the site to maintain liability for it upon a change in use. Another way is for the government to assume liability for all past contamination once mining has ceased and the use changed.

(12) Public Involvement

Some stakeholders commented on the limited public notice of, and opportunity for consultation regarding, decisions respecting mine reclamation. The *Mines Act* provides for public notice but such notice is not mandatory, nor is it given in all cases. There is a greater opportunity for public access to information and public input under the Contaminated Sites Provisions.[175]

If MELP does not exercise its powers under the Contaminated Sites Provisions in relation to mine sites, either voluntarily, as is currently the case in some regions, or because mines are exempted from the Contaminated Sites Provisions, the notification requirements in the Contaminated Sites Provisions will not be invoked. Of particular significance, if mines are exempted from the Contaminated Sites Provisions, mines will not be included in the site registry. The site registry is a useful tool for informing the public about the environmental condition of a property.

To the extent that one is of the view that public consultation will result in better remedial options, exempting mines from the Contaminated Sites Provisions could have a negative impact on environmental protection. Perhaps more importantly, public consultation will likely increase public confidence in decisions made by government.

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[175] Discussed at page 38.

PART 5 - LAW IN OTHER JURISDICTIONS

This part contains a brief summary of the law regarding contaminated mine sites in three other Canadian jurisdictions.

A. QUEBEC

In Quebec, the *Mining Act* administered by the Ministry of Natural Resources and the *Environment Quality Act* administered by the Ministry of the Environment address environmental impacts from mining activities.

The *Mining Act* was amended in 1995 to provide a regime for rehabilitation of mine sites. Under this new regime, the holder of mining rights who conducts exploration work, carries out mining operations, operates a concentration plant or conducts mining operations on tailings must file a rehabilitation plan with the Natural Resources Minister. The rehabilitation plan must be carried out either progressively during the course of operations or upon cessation of operations. The rehabilitation obligation remains until the Natural Resources Minister issues a certificate of release. A certificate of release may be issued in two situations:

- where the mine is sold to a third party who undertakes to meet the required reclamation objectives: Prior to issuing a certificate of release in this situation the Ministry of Natural Resources ("MNR") will take into consideration the purchaser's capacity to perform the rehabilitation and the amount of the security to be provided. The Ministry will sometimes consult on an informal basis with the Ministry of Environment ("MOE") before issuing the certificate of release.
- where the site has been rehabilitated to the Ministry's satisfaction or where no rehabilitation work is considered necessary: The MNR and the MOE have entered into a protocol which requires consultation by the MNR with the MOE before issuing a certificate of release. However the MOE is not a party to the certificate of release.

Being released from liability under the *Mines Act* does not restrict the application of the *Environment Quality Act*. Under this Act, persons who actually contaminated a mine site or allowed contamination to occur may be subject to fines and imprisonment and to remediation orders. Prosecutions resulting in penal sanctions are subject to a two year limitation period. However, the issuance of a remediation order is not subject to any limitations and may be issued against a person who caused or allowed contamination notwithstanding the cessation of mining operations or the transfer of the person's interest. Notwithstanding the foregoing, a representative of the MNR advised that he was not aware of any case in which the MOE has exercised its powers under the *Environment Quality Act* after an MNR certificate of release had been issued in a situation where the rehabilitation process had been completed.

B. ONTARIO

The Ontario *Mining Act* provides that when conditions set by the Minister of Northern Development and Mines are met and mining lands are surrendered, the mining companies involved with the site are exempted from liability under key sections of the Ontario *Environmental Protection Act* ("EPA").[176]

The Minister may refuse to accept surrender of a mine site in which case liability will continue. The exemption protects the companies from remediation orders, waste removal orders and preventative measures orders under the EPA. The section does not protect the mine company from any prosecutions or administrative penalties which may be imposed under the EPA. There is no exemption from the Ontario *Water Resources Act* ("OWRA") or other statutes which may apply. However the key order powers, which allow for the imposition of liability on past owners will not apply. The provisions which do apply (prosecutions and OWRA) are subject to a two year limitation period. When an operating mine is transferred, the previous mine owner will remain liable under the EPA.

C. ALBERTA

The Alberta *Environmental Protection and Enhancement Act* requires that "operators" reclaim land and obtain a reclamation certificate. Operators include current and past operators of a site. Operators may be required to post security however the amounts are very low. The security system is currently being reviewed. Upon receipt of a reclamation certificate, the operator cannot be subject to an environmental protection order. However, the Act allows a "director" under the Act to designate a site a contaminated site where a substance may cause, or has caused, a significant adverse effect. This designation may be made even if a reclamation certificate has been issued for the site. Once a site has been so designated, the director may issue an environmental protection order ordering any "person responsible" to clean up the site. Persons responsible include past and present owners of the substance or thing or persons who have or had charge or control of the substance or thing. Therefore orders can be made against past owners even where they have reclaimed a site and received government sign-off on the reclamation.

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[176] s. 149.1(4)

PART 6 - OPTIONS

There is a myriad of potential options, and combinations of options, to address the various issues discussed in Part 4. This Part discusses some of the primary options.[177]

The options are categorized based on whether they relate to (i) all mine sites, (ii) exploration sites, (iii) operating mine sites (including closed mine sites), (iv) "good samaritan" remediation of historic mine sites; or (v) administrative issues.

A. ALL MINE SITES

(1) **Sections 31 and 33 not to apply to prevention or remediation of contamination at mine sites.** Amend sections 31 and 33 of the WMA so that these sections do not give MELP managers the power to order prevention or remediation of contamination at, or originating from, a mine site.

Comment: The fundamental issue underlying this report is the relationship between the *Mines Act* and the Contaminated Sites Provisions of the *WMA*. However, there is an additional complication because the *WMA* contains a third regime for dealing with contaminated sites under sections 31 and 33.

In our view, it is inappropriate for the *WMA* to contain a sophisticated, detailed regime to address contaminated sites, while retaining powers to deal with exactly the same issues under the order powers in sections 31 and 33. In a crude way, sections 31 and 33 duplicate the remediation order powers in the Contaminated Sites Provisions. The existence of these sections merely creates additional ambiguity for both the regulator and the regulated.

The sections add little to the manager's powers under the Contaminated Sites Provisions regarding the remediation of contaminated sites. The only additional power of significance is under section 33, whereby a manager may order steps to prevent pollution, even if a site is not a contaminated site and, as a result, is not subject to the Contaminated Sites Provisions. However, a similar power is given to the minister under section 12 of the *WMA* which deals with spill prevention.[178] In any event, with respect to core mining contamination, section 33 would almost invariably be used where the pollution to be prevented is caused by existing contamination such that the site is a contaminated site (i.e. ML/ARD from the existing waste rock piles), in which case a manager may issue a remediation order under the Contaminated Sites Provisions to prevent additional contamination.[179] However, the same cannot be said of all potential contamination at mine sites (i.e. such as hydrocarbon and chemical spills) and therefore the Contaminated Sites Provisions should be amended to include pollution prevention order powers.

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[177] It is important that the reader review the definitions set out in Appendix B before reading this Part. The definitions of "brownfield area", "contaminated site", "contamination", "greenfield site", "mine site", "mining company" and "small scale exploration" are of particular importance. The distinctions among "contaminated site", "mine site" and "brownfield site" are important. An exemption from being a responsible person under the Contaminated Sites Provisions is an exemption in respect of a "contaminated site" since this is the term used in the *WMA*. All parts of a "contaminated site" will not necessarily be contaminated. A parcel of land will be a "contaminated site" even if only a small portion of it is contaminated. A "brownfield area" and a "mine site" may be essentially coterminous with a "contaminated site" or may constitute only a part of the "contaminated site". We have not always used these terms precisely in accordance with their definitions in this report where the distinctions are not critical. However, we have attempted to use the terms precisely in the Recommendations on Part 7.

[178] Section 12 of the WMA provides that the minister may order a person with possession, charge or control of a polluting substance to, among other things, carry out measures to prevent or abate an escape or spill of a substance. A limitation on this power is that it can only be exercised by the minister, not by a manager.

Sections 31 and 33 will need to be maintained to regulate environmental concerns at mine sites which do not involve core mining contamination.

(2) **Exemption for all mine sites from the Contaminated Sites Provisions.** Exempt all mine sites from the Contaminated Sites Provisions but leave sections 31 and 33 in place.

Comment: This option would return the regulation of contamination on mine sites to the situation which existed prior to the Contaminated Sites Provisions coming into force on April 1, 1997. Liability for contamination on a mine site would be borne by the current owner of the mine under the *Mines Act* and the *WMA* permitting powers, except to the extent that sections 31 and 33 applied to impose liability on past owners and operators. While orders could be made against past owners and operators in certain circumstances under sections 31 and 33, mining companies would avoid the much broader joint, several and retroactive liability provisions of the Contaminated Sites Provisions.

Providing an exemption for a type of site, rather than an entity such as a mining company, is a departure from the scheme of the Contaminated Sites Provisions which generally grants exemptions to entities, not properties. One of the consequences of exempting mine sites rather than mining companies is that, through this mechanism, both liability and administrative issues under the Contaminated Sites Provisions are addressed. In other words, as long as the exemption applies, none of the liability or administrative aspects of the Contaminated Sites Provisions apply to the mine site. If the exemption applied only to mining companies it would not affect MELP's right to exercise all of its powers under the Contaminated Sites Provisions except against the mining company that obtained an exemption. If the site is exempted, all parties who would otherwise be "responsible persons" would enjoy the benefits of the exemption. In addition, this option would mean that certain useful aspects of the Contaminated Sites Provisions, such as the soil relocation provisions, remediation standards, the civil cause of action and the site registry, would not apply to mine sites. Of course, the exemption for mine sites could be drafted such that the soil relocation provisions continued to apply to mine sites and the remediation standards could be adopted by MEM by way of regulation or policy.

If this option is implemented, consideration will have to be given to what will happen when the exemption ceases because the site is used for a non-mining purpose. At that time, the site will again fall under the Contaminated Sites Provisions and all past owners and operators of the site will again become subject to the retroactive, joint and several liability provisions. Therefore, this option will not solve the concerns of the mining industry because mining companies will always have a contingent liability regarding the site which would spring into life upon the site being returned to non-mining uses. In order to avoid this problem, this option would have to apply such that any owner or operator of the site prior to the change in use would enjoy an exemption under the Contaminated Sites Provisions notwithstanding the change in use.

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[179] "Remediation" is broadly defined in the WMA to include "action to eliminate, limit, correct, counteract, mitigate or remove any contaminant."

There was little interest expressed by the stakeholders, including mining industry representatives in reverting totally to the pre-1997 regime.

B. EXPLORATION SITES

This section applies to sites where "exploration activities", as defined in the MX Code, are carried out. Generally, exploration activities do not present a significant risk to the environment. Therefore, environmental protection is of less concern regarding these sites than operating mine sites. However, the risk from exploration work increases as the land disturbance resulting from exploration work increases.

(3) **Maintain the status quo.** Make no changes to the current liability regime.

Comment: With this option, a mining company that transfers or surrenders its interest in an exploration site will remain jointly, severally and retroactively liable under the Contaminated Sites Provisions in respect of existing and future contamination at the site. It will also remain subject to orders under sections 31 and 33. This option will not address the concerns of the mining industry regarding the impact of liability under the Contaminated Sites Provisions on transferability of exploration sites. This option is not supported by most stakeholders.

(4) **Clarify minor contributor protection.** Clarify the protection afforded minor contributors pursuant to section 27.3 of the WMA by:

- *amending section 27.3 to require the manager to grant a "responsible person" minor contributor status if the conditions of the section are satisfied; and*
- *clarifying, through policy or regulation, the types of circumstances under which a "responsible person" who has satisfied the requirements of sections 27.3(1)(a) and (b) will not satisfy section 27.3(i)(c).*

Comment: The purpose of the minor contributor section of the Contaminated Sites Provisions is to relieve "responsible persons", who have only contributed a minor amount to the contamination, from onerous joint and several liability provisions. Therefore, it is specifically designed to address the concerns of mining companies regarding the consequences of transferring an exploration site. If mining companies were confident that they could obtain minor contributor status where their contributions to contamination were insignificant, many of the industry's concerns would be resolved. They would not face the spectre of being a "responsible person" in respect of a major mine site merely because they carried out exploration work on the site. However, the minor contributor section, as currently drafted, does not provide the requisite comfort. Until the questions regarding the application of the section are clarified by the courts, or through experience with determinations made by managers over time, the minor contributor section will remain problematic for mining companies without the changes proposed in this option.

The first change proposed in this option could be accomplished simply by substituting the word "shall" for "may" in the first line of section 27.3(1). The second change will be more complicated to draft and will require further discussion. However, at a minimum, it should ensure that a "responsible person" who satisfies the requirements of sections 27.3(1)(a) and (b) will not be denied minor contributor status merely because the person has the "deepest pockets" or is the only remaining viable "responsible person".

MELP should also consider the feasibility of defining what is meant by a "minor" contribution to contamination. We recognize that this will be difficult. However, without some guidance on this question, the protections afforded by the section remain uncertain for anyone who has contributed beyond a very insignificant amount of contamination.[180]

(5) **Limit liability under Contaminated Sites Provisions to actual contribution to the contamination.** Limit the liability of a mining company in respect of a contaminated site to the remediation costs that are attributable to the company's activities if:

- *the company has only carried out exploration activities at the site;*
- *the company has transferred or surrendered its exploration permit and its tenure regarding the site; and*
- *in respect of a transfer, the company was in compliance with its exploration permit immediately prior to the transfer and, in respect of a surrender, the company has satisfied all requirements of its exploration permit.*

Comment: This option is similar to obtaining the protection afforded minor contributors in that it imposes liability only for contamination caused, or contributed to, by the mining company, rather than joint and several liability. As with the protection for minor contributors, this option does not provide an exemption from liability under the Contaminated Sites Provisions and, therefore, a mining company may have to fund remediation long after it leaves a site. However, the mining company will not be faced with the prospect of being responsible for contamination from a major mine that may subsequently be built on the site.

The differences between this option and minor contributor protection is that this option is not limited to situations where the company is able to satisfy the conditions for being a minor contributor. It therefore avoids some of the problematic aspects of the minor contributor provision (discussed at Option (4)). However, if the option is only applicable in respect of exploration sites, it will likely apply primarily in situations where the mining company is, in fact, a minor contributor.

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[180] Consideration of this issue will involve a fundamental discussion of the rationale and fairness of the *WMA* which imposes 100% liability on any responsible person above the minor contributor threshold. That is, a responsible person who contributed for example, 5% of the contamination may obtain minor contributor status and thereby only be responsible for 5% of the costs of remediation. A person who contributed 8% of the contamination may not obtain that status and, as a result, will be responsible for 100% of the costs of remediation if there are no other viable responsible persons available.

This approach has a significant advantage over the exemption alternative proposed in Options (6), (7) and (8), because it does not release a party which causes contamination from the consequences of that contamination, but it does eliminate the spectre of joint and several liability which is the primary concern of mining companies. Since this alternative does not provide a release, it may be reasonable to provide the benefits of the limitation to all levels of exploration work, not just to small scale exploration. This would assist in promoting exploration generally, without increasing the risks to the environment.

The option will raise evidentiary issues regarding the mining company's contribution to the contamination. The onus will be on the mining company to establish the limits of the contamination it caused. The same issue faces an applicant for minor contributor status.

(6) **Exemption from Contaminated Sites Provisions upon satisfaction of permit conditions.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site if:

- *the company has only carried out exploration activities at the site;*
- *the company has transferred or surrendered its exploration permit and its tenure regarding the site; and*
- *in respect of a transfer, the company was in compliance with its exploration permit immediately prior to the transfer and, in respect of a surrender, the company has satisfied all requirements of its exploration permit.*

Comment: This option exempts a mining company which has transferred or surrendered its interest in an exploration site from liability under the Contaminated Sites Provisions. Although this exemption is not expressly subject to MEM approval, such approval is implicitly required because, in respect of a surrender of interest, the exploration permit conditions imposed by MEM must be satisfied and, in the case of a permit transfer, MEM's express approval is required.

As sections 31 and 33 of the *WMA* will continue to apply, the company will remain liable for any contamination it caused (as well as any other liability that may be imposed under section 33 as discussed at page 54).

In some respects this option is not significantly different than the exemption provided by section 26.6(1)(e) of the *WMA*.[181] Section 26.6(1)(e) provides an exemption for an otherwise responsible person where the person acquired a site which was not a contaminated site provided the person did not subsequently cause the site to become a contaminated site. This exemption avoids the harsh result of a past owner of a site being jointly and severally liable to remediate subsequent contamination of the site. However, the exemption in section 26.6(1)(e) may not be available to a mining company that carries out exploration work because an exploration site will often become a contaminated site as an inevitable consequence of the exploration work, even though the work was carried in strict compliance with the exploration permit. Therefore, this option is a relatively minor adjustment to the current principles of the Contaminated Sites Provisions to accommodate the realities of the mining industry.

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[181] "26.6(1)(e) The following persons are not responsible for remediation at a contaminated site:

...

(e) an owner or operator who owned or occupied a site that at the time of acquisition was not a contaminated site and during the ownership or operation the owner or operator did not dispose of, handle or treat a substance in a manner that, in whole or in part, caused the site to become a contaminated site;"

Consideration of section 26.6(1)(e) requires consideration of the distinction between contamination generally and core mining contamination. If the rationale for this exemption is to give a mining company the benefit of an exemption similar to section 26.6(1)(e), recognizing that permitted exploration activities will often result in core mining contamination, it is arguable that the exemption should not be available if the company causes other types of contamination, such as hydrocarbon contamination. With respect to this type of contamination, there is no difference between mining companies and other companies.

However, this distinction may not be significant when dealing with exploration sites. In order for the exemption to apply to a mining company, the company will have to be in compliance with its exploration permit. The permit will require that the exploration activities not have caused contamination, other than certain permitted core mining contamination. Therefore, the exemption will not be available if there is unremediated, non-core mining contamination at the site. Consequently, we do not propose that the exemption be limited to core mining contamination.

Since this exemption will remove the backstop provided by the Contaminated Sites Provisions, MEM will have to consider putting more effort into inspecting exploration sites and increasing the very small bonds which MEM often takes regarding these types of sites.

One might argue that a mining company should always remain responsible for all contamination it causes. However, given the minimal environmental risk associated with exploration work and for ease of administration, a complete exemption from liability without approvals from MEM or MELP (except to the extent that requirements of these agencies are incorporated in the exploration permit) may be appropriate.

The benefits of this exemption will come into effect upon transfer or surrender of the company's interest in the site and its exploration permit.

(7) **Exemption from Contaminated Sites Provisions and sections 31 and 33 upon satisfaction of permit conditions.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions and sections 31 and 33, if the conditions in Option (6) are satisfied.

Comment: This option is the same as Option (6) except that the mining company will also not be subject to section 31 and 33 orders regarding remediation of contamination[182]. If this option is chosen, upon surrender of a mining company's interest in an exploration site and related permits, and release of any security provided under the *Mines Act*, all residual liability regarding the contamination at the site *would be borne by the government. In the case of a transferred* exploration site, any liability regarding the site would be borne by the transferee.

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[182] The reference to exemptions from sections 31 and 33 in this, and the subsequent, options is to the amendment to sections 31 and 33 contemplated in Option (1) but only in respect of the particular circumstances being dealt with by the option in question.

Unless companies undertaking exploration work are exempted from sections 31 and 33 as well as from the Contaminated Sites Provisions, they will remain potentially liable for contamination arising from their work on site after they have surrendered or transferred their interest in the site.

The Joint Submission and the CSIC Mining Subcommittee both propose options whereby an exemption is given regarding only the "retroactive" provisions of sections 31 and 33 so that MELP retains the ability to exercise the powers in sections 31 and 33 against the current owner or operator of an exploration site. Such powers are similar to MEM's powers under the *Mines Act*.

If this option is chosen, MELP will lose its power to deal with remediation of contamination under the *WMA*, other than through its ability to control discharges, including ML/ARD discharges, through the *WMA* permitting system and requirements regarding spills.

(8) Exemption from Contaminated Sites Provisions (and sections 31 and 33) upon satisfying permit conditions and obtaining MELP approval. *Exempt a mining company from being a "responsible person" under the Contaminated Site Provisions (and sections 31 and 33) if the conditions in Option (6) are satisfied and MELP approves the exemption.*

Comment: Options (6) and (7) do not give MELP the power to refuse to allow an exemption from the Contaminated Sites Provisions. To the extent an exploration permit deals with MELP's concerns, the requirement for MELP's approval may be redundant. However, this option would provide MELP with the power to ensure that any environmental concerns not covered in the permit are addressed prior to an exemption being granted. On the other hand, this process would add additional administrative steps and costs to deal with sites with limited risks.

(9) **Exemption from Contaminated Sites Provisions regarding brownfield areas.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site which includes a brownfield area, to the extent of the exiting contamination on the brownfield area if:

- *the company only carried out exploration activities at the site;*
- *the company is in compliance with its exploration permit; and*
- *the exploration work, although carried out within a contaminated site which includes a brownfield area, is not being carried out within, or in close proximity to, the brownfield area; or*
- *the exploration work is carried out within, or in close proximity to, the brownfield area and:*

& *the company carries out a baseline survey of the existing site conditions and, where appropriate, undertakes a monitoring program of those conditions while it has tenure regarding the site; and*

& *MELP and MEM approve the proposed exploration work as set out in the exploration permit (subject to the dispute resolution process);*

except to the extent the mining company exacerbates the existing contamination.

Comment: The purpose of this option is to encourage the re-use of brownfield areas. At present, if a mining company carries on exploration activities within a contaminated site containing a brownfield area, the company will become a "responsible person" in respect of contamination relating to the brownfield area.

This option recognizes that risks from exploration work carried out on brownfield areas may be more significant than exploration carried out on greenfield sites. In order to ensure that these issues are addressed, this option requires both MEM and MELP approval of the exemption. However, neither ministry has a veto on the issue as any dispute between them is subject to the dispute resolution process.

The requirement for a baseline survey is to establish a baseline to determine whether the new exploration work exacerbates any existing problems at the site. The nature of the survey will require further input from MELP and MEM.

This exemption applies from the time the company begins work on the site so that the Contaminated Sites Provisions cannot be used to require the company to clean up existing contamination prior to the company completing its work on the site.

One of the criteria for obtaining the exemption is that the company remain in compliance with its permit. However, it is not intended that the exemption be irrevocably lost if there is permit non-compliance. The benefit of the exemption should be reinstated upon the permit being brought back into compliance. The exemption will be irrevocable if the permit is in compliance at the time the company transfers or surrenders its exploration permit and its tenure regarding the site.

All of the variations set out above in Options (6) through (8) (i.e. approval only by MEM; approval by MEM and MELP; exemption from sections 31 and 33) could also be applied to this option dealing with exploration at brownfield areas.

Note that this option refers to liability regarding the historic contamination in the brownfield area. The mining companies' liability regarding other contamination at the site will depend on whether another exemption or limitation of liability, such as Option (6), is available.

(10) **Exemption from Contaminated Sites Provisions applies only to small scale exploration.** Restrict the limitation of liability in Option (5) and the exemptions in Options (6), (7), (8) and (9) to small scale exploration sites.

Comment: The risks posed by exploration sites can vary greatly depending on a number of factors including the degree of disturbance of the land, the environmental sensitivity of the site's location and the nature of the mineralization at the site. The degree of disturbance of the land caused by the exploration is a significant factor which is relatively easy to quantify. All things being equal, the greater the disturbance, the greater the environmental risk. Therefore, it may be appropriate to treat exploration sites involving different degrees of land disturbance differently when considering whether, and on what terms, an exemption should be granted.

The appropriate threshold or thresholds for different treatment of exploration sites requires further input from the ministries. We have not examined the technical issues involved in determining appropriate thresholds of land disturbance to distinguish exploration sites. We note that the Joint Submission has proposed different approaches to exploration sites based on three thresholds: sites at which the total excavation of rock (including ore, waste rock and mineralized overburden) is no more than 1,000 tonnes; sites at which the total excavation is between 1,000 tonnes and 10,000 tonnes; and sites at which excavation is in excess of 10,000 tonnes. The Joint Submission proposes an exemption without MELP consent for the first level, an exemption with MELP consent for the second level and no exemption for advanced exploration over 10,000 tonnes. However, we understand that MEM does not currently track, nor is it practical for MEM to track, the amount of rock removed from exploration sites unless the excavation involves bulk sampling. Subject to further input from MEM and MELP, we have assumed in this report that the environmental risks from exploration activities up to the bulk sampling threshold are generally low and will almost always be capable of being addressed under the *Mines Act*. We therefore consider all exploration work up to the bulk sampling threshold as "small scale exploration" for the purpose of this report.

It may be appropriate to choose a higher threshold if the limitation of liability approach proposed in Option (5), rather than the exemption from liability approach proposed in Options (6), (7) and (8), is taken. Under the limitation of liability approach, MELP maintains its ability to go after mining companies which previously did work at the site, although only up to their contribution to the contamination.

Further consideration should be given to whether a limitation to small scale exploration is appropriate regarding Option (9) dealing with brownfield sites where the new exploration work is not carried out on or near the brownfield area. Where there will clearly be no exacerbation of the contamination of the brownfield area by the new exploration work, the rationale for limiting the exemption to small scale exploration is problematic.

Raising the threshold as discussed in the two prior paragraphs would assist in promoting all types of exploration.

C. OPERATING MINE SITES

This section deals with currently operating mine sites and closed mine sites in respect of which a section 10 *Mines Act* permit is currently, or in the future, will be in place. It also applies to exploration sites which involve exploration work in excess of small scale exploration such that the exemptions regarding exploration sites discussed above are not applicable. It does not apply to historic mine sites, such as Britannia or Mt. Washington.

When a company no longer wishes to operate a mine, it can sell the mine as a going concern or close the mine. When a company closes a mine, it has three options regarding the property: to continue to hold the property, in which case no further use will be made of it; to transfer or lease the property to a third party interested in reusing it to reopen the existing mine, operate a new mine or for a non-mining purpose; or to surrender it to the Crown. If the property is surrendered to the Crown another party could acquire rights to the site and use it for mining or other purposes authorized by the government.

A mining company may be reluctant to lose control of a mining property by transferring or surrendering its interest in it, fearing that a future use of the site could lead to increased contamination for which it would be liable. For example, a new owner of the site might expand the mine and thereby increase the contamination at the site. In addition, contamination may increase as a result of damage to existing reclamation works caused by renewed mining activity or other activities carried out on the site.

(11) **Maintain the status quo.** Make no changes to the current liability regime.

Comment: With this option, a mining company that transfers a mine site will remain jointly, severally and retroactively liable under the Contaminated Sites Provisions in respect of past and future contamination at the site. It will also remain subject to orders under sections 31 and 33.

(12) **Exemption from Contaminated Sites Provisions with MEM approval.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site if:

- *the company has transferred or surrendered its Mines Act permit and its tenure regarding the site;*
- *in respect of a transfer, the company was in compliance with its permit immediately prior to the transfer and, in respect of a surrender, the company has satisfied all requirements of its permit;*
- *in respect of a transfer, security satisfactory to MEM has been posted; and*
- *MEM approves the exemption.*

Comment: This exemption would release a mining company from liability under the Contaminated Sites Provisions but the company would remain liable under sections 31 and 33 of the *WMA*.

Prior to MEM giving its approval, the issue would have to be considered by the RMDRC to ensure MELP input is considered.

(13) **Exemption from Contaminated Sites Provisions and sections 31 and 33 with MEM approval.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions and from liability under sections 31 and 33 if the conditions in Option (12) are satisfied.

Comment: This option is the same as Option (12), except that the exemption is expanded to apply to both the Contaminated Sites Provisions and sections 31 and 33.

The option limits MELP's role in regulating remediation of mine sites (except to the extent of MELP's input through the RMDRCs and its powers to deal with discharges, including ML/ARD discharges, through its *WMA* permitting powers and requirements regarding spills). This option will reduce MELP's role further than the situation which existed prior to the passage of the Contaminated Sites Provisions because its powers under sections 31 and 33 will be removed.

Whether this option will result in adequate protection of the environment depends upon the financial strength of the new owner (if a transfer is involved), the sufficiency of the security posted under the *Mines Act* and the requirements regarding the condition of the site imposed by MEM before approving the exemption.

The option might be combined with an increased role for MELP on the RMDRCs to ensure that its input is taken into account in any reclamation program regarding the site.

(14) **Exemption from Contaminated Sites Provisions and sections 31 and 33 with MELP and MEM approval.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions and from sections 31 and 33 if the conditions in Option (12) are satisfied and MEM and MELP approve the exemption (not subject to the dispute resolution process).

Comment: The requirement for joint approval would provide MELP with a veto power to ensure that environmental concerns are addressed to MELP's satisfaction.

It is doubtful that an application for an exemption under this option would be successful in many cases. However, this exemption would be available regarding the few mine sites which clearly pose minimal risk to the environment, in particular, advanced exploration sites which are not able to benefit from the exemptions applicable to exploration sites.

(15) **Government indemnity.** An indemnity from the government under the Financial Administration Act be available to a mining company in respect of a mine site.[183]

Comment: The benefit of this option is that it allows for an evaluation of the particular circumstances of each site rather than granting a blanket exemption. The disadvantage to mining companies is that such an indemnity will likely be granted only rarely. However, it does provide an opportunity to avoid the sterilization of a mine site where the political process determines, in the public interest, that the contamination risks at the site should be borne by the government, and hence the taxpayers, rather than the mining company.

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[183] See discussion of *Financial Administration Act* at page 59.

We anticipate that neither Recommendation (14) or (15) will be available in respect of most mine sites. Consequently, in most circumstances, a mining company will continue to be jointly and severally liable under the Contaminated Sites Provisions in respect of contamination of an operating mine site after the company transfers the site. To some degree, this risk can be reduced by obtaining an indemnity for existing and future contamination from a purchaser of the mine, although the value of this indemnity will depend on the long-term financial strength of the purchaser. However, mining companies will have to consider this potential liability when deciding whether to proceed with a mine project in British Columbia. At the moment, there is neither consensus among stakeholders nor a particularly strong push by most mining company representatives to gain a full exemption from the Contaminated Sites Provisions regarding operating mine sites. Nor is such an exemption warranted given the questions that still exist regarding the adequacy of the security held by MEM regarding existing mines and the uncertainties relating to long-term environmental risks at many mines sites. Options (14) and (15) merely provide a small window of opportunity to avoid liability in very particular cases.

If this option is chosen, the *Financial Administration Act* process should be refined to clarify the criteria and process for obtaining an indemnity. Most stakeholders also advocated making the process more transparent and subject to public input.

(16) **Create a mine reclamation fund.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions if a mine reclamation fund financed by the mining industry is established to backstop any gap in environmental protection resulting from the exemption.

Comment: This option proposes that mining companies be obliged to contribute to a fund which would be available to pay for remediation costs the government may incur in carrying out remediation required as a result of mining companies being exempted from liability under the Contaminated Sites Provisions. In other words, as a *quid pro quo* for the liability exemption, the mining industry would have to finance any increased risks through the establishment of a fund. Although this option is acceptable to some mining company representatives, others disagreed as they felt that it would result in the financially stronger companies paying for problems created by the weaker companies.

The *Mines Act* currently includes provision for a mine reclamation fund. However amounts paid into this fund are to be credited to a separate account in favour of the specific mine site regarding which the funds were collected. Therefore, this option would require a different type of reclamation fund which would allow the funds to be used to address problems at any mine site in the province.

(17) **Exemption for post-mining users.** Exempt a person who uses a contaminated site which includes a reclaimed mine site from being a "responsible person" under the Contaminated Sites Provisions in respect of the contaminated site to the extent of the existing contamination from the reclaimed mine site if:

- *the person does not acquire title to the site or lease the site for a term of more than 30 years (including options);*

- *prior to the person's post-mining use of the site, the person was not a "responsible person" in respect of the site; and*
- *the person uses the site for a use specified under the reclamation permit for the site or for another use which is approved by MEM and MELP (subject to the dispute resolution process);*

except to the extent the person exacerbates the existing contamination.

Comment: Under the *Mines Act*, mining is considered a temporary use of the land such that when the mining operation ceases, the land must be returned to a productive use as contemplated in the reclamation plan for the site. Such uses commonly are forestry and grazing. If subsequent users become "responsible persons" and therefore jointly and severally liable in respect of contamination from the mining operation, the goal of returning the land to a non-mining use will be thwarted because potential subsequent users will hesitate to become involved with the land. Consequently, an exemption for prior mining related contamination should be provided to persons who carry out authorized uses of the land, except to the extent their use of the land exacerbates the existing contamination.

This exemption should not be available to purchasers of the land or long term lessees who acquire an interest akin to an ownership interest. This restriction is to avoid a windfall to a purchaser who knowingly acquires a mine site and who subsequently gets the benefit of remediation carried out by the government or a prior owner. This restriction may require further refinement. For example, if a mine site is close to an urban centre, the appropriate use of the land may involve the development of, for example, an industrial park. It is unlikely that any developer would proceed with such a project without both title to the property and an exemption from liability for the mine contamination. As a consequence, the land would likely remain undeveloped, to the detriment of the community unless an exemption were available.

A subsequent user of the property should be responsible to the extent that its actions exacerbate the contamination problems at the site and for the costs of cleaning up the site to a higher remediation standard than that applicable to the use specified in the reclamation permit.

(18) **Restrictive covenant.** Require that a restrictive covenant be placed on a reclaimed mine site, restricting the use of the land to the uses specified in the reclamation permit and any other uses that MEM and MELP approve.

Comment: This option allows MEM to MELP to restrict the activities carried on at a reclaimed mine site to ensure that post mining uses do not jeopardize the reclamation works or otherwise pose a risk to the environment. The option also provides some protection to mining companies which have an interest in the effect of post-mining uses on their reclamation works. It will also provide notice to potential post-mining users of the land of the potential environmental risks regarding the land.

(19) **Exemption for directors, officers, employees and agents.** Exempt directors, officers, employees and agents of a mining company from being "responsible persons" under the

Contaminated Sites Provisions if the mining company is granted an exemption in respect of an exploration site or an operating mine site.

Comment: A "responsible person" under the *WMA* can include a director, officer, employee or agent of a company. It is doubtful that a circumstance would arise where a director, officer, employee or agent of a mining company which enjoyed the benefit of an exemption would be subject to liability under the Contaminated Sites Provisions. However, to remove any doubt, an exemption for these potentially "responsible persons" would be a logical consequential change.

D. "GOOD SAMARITAN" REMEDIATION

Mining company representatives advised us that, in certain situations, mining companies would be willing to carry out remediation work voluntarily at historic mine sites in the vicinity of their operations if such work did not lead to liability for the companies. However, companies are reluctant to carry out volunteer work because they will thereby become a "responsible person" in respect of the site. This is obviously an unintended negative consequence of the Contaminated Sites Provisions. Imposing liability on a volunteer is both unfair to the volunteer and detrimental to the environment as it decreases the likelihood that remedial work will be carried out.

(20) **Appointment as Crown agent.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions and from sections 31 and 33 if the company is a "good samaritan" which voluntarily remediates a contaminated site as an agent of MEM or MELP, except to the extent contamination is caused or exacerbated by work carried out negligently by the mining company.

Comment: We understand that mining companies have sought protection from liability in respect of their voluntary remediation of contaminated sites by being appointed as an agent of MEM to carry out the work. It is unclear whether this approach provides immunity from liability under the Contaminated Sites Provisions. Section 28.6 of the *WMA* provides immunity to agents of the government for certain actions. However, as currently drafted, the section is not broad enough to protect a mining company which is appointed an agent of the government to remediate a contaminated site. Section 28.6 could be amended to provide that a company appointed as an agent of the government to carry out remediation work is not liable under the Contaminated Sites Provisions unless it carries out the work in a negligent fashion, in which case its liability would be limited to the consequences of its negligence.

To be effective, a similar exemption would also have to apply to liability under sections 31 and 33.

(21) **Good samaritan legislation.** Enact legislation to protect a mining company which is a "good samaritan" and which voluntarily remediates a contaminated site.

Comment: Several stakeholders suggested that this issue could be dealt with by enactment of a statute similar to the U.S. *Good Samaritan Abandoned or Inactive Mine Waste Remediation Act.*[184] This draft statute is intended to address concerns regarding provisions in the *Clean Water*

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[184] 106th Congress, 1st Session, s. 1787, 1999.

Act.[185] Under the *Clean Water Act*, a person who voluntarily remediates a portion of an abandoned mine site may become liable for continuing discharges. The proposed statute allows "good samaritans" to apply for permits to go onto mine sites and do work to improve water quality. The applicant is liable for completing the work set out in the permit application, but is not responsible for future discharges from the site. Prior to obtaining a permit, the applicant must make reasonable efforts to locate parties who are responsible for clean-up to the standards of the *Clean Water Act*.

(22) **Exemption for "good samaritan" remediation.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site as a result of carrying out "good samaritan" remediation if:

- *prior to carrying out the remediation, the mining company was not a "responsible person" in respect of the site; and*
- *MEM and MELP approve of the work (subject to the dispute resolution process);*

except to the extent contamination is caused or exacerbated by work carried out negligently by the mining company.

Comment: This option is the most straightforward option for encouraging remediation of historically contaminated sites by "good samaritans".

We considered whether a volunteer which exacerbates a problem at a site in the absence of negligence should be responsible for that exacerbation. However, in order to encourage volunteers which carry out work approved by MEM and MELP, we have concluded that, in the absence of negligence, they should not be responsible if something goes wrong.

Section 26.6(1)(h) of the *WMA* provides an exemption to a person who provides "assistance or advice respecting remediation work at a contaminated site ... unless the assistance or advice was carried out in a negligent fashion." This exemption might be interpreted broadly so as to apply to a "good samaritan", however it is focussed on protecting environmental consultants who assist others to carry out remediation, not those who actually carry out the work. This option could be achieved either by a new exemption or by expanding the exemption in section 26.6(1)(h).

E. ADMINISTRATIVE ISSUES

This section sets out options for addressing some of the many administrative issues raised by stakeholders pertaining to the application of the Contaminated Sites Provisions.

(23) **One window approach.** Use the RMDRCs as a "one window" approach for all decisions in respect of remediation/reclamation of mine sites.

All issues regarding remediation and reclamation of mine sites should be dealt with through the RMDRCs. This process is currently in effect to a certain extent in a number of regions of the province. To ensure this process is followed in all regions, the Chief Inspector should be required to refer all reclamation permit applications and decisions regarding contamination issues to the RMDRCs.

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[185] 33 U.S.C., s/s 1251.

(24) **Dispute resolution process.** Create a process to resolve disputes between MEM and MELP regarding the remediation/reclamation of mine sites.

Comment: There are several possible decision-making models which could apply to deal with contaminated mine sites. Firstly, each ministry could have the power to make decisions independently. This is the current system based on independent regimes under the *Mines Act* and the Contaminated Sites Provisions dealing with contamination at mine sites. The regime which existed prior to the passage of the Contaminated Sites Provisions presents a second model. This system placed decision-making power regarding contamination at mine sites in the hands of MEM.[186] Under that system, MEM would consider recommendations from MELP but had no legal obligation to do so. A third model could require agreement by both MEM and MELP on all contamination issues. This system would, in effect, give each ministry a veto power in respect of those issues.

Option (24), in conjunction with Option (25), is a compromise position. Both MEM and MELP will retain their powers to deal with contaminated mine sites.[187] If MEM and MELP do not agree on an issue, the dispute will be resolved through a dispute resolution process and both ministries will proceed on the basis of that decision. As such, neither ministry has ultimate control.

The ministries have been discussing a dispute resolution process. The process being considered by the ministries is set out in the Required Actions Memorandum which provides that issues will be discussed firstly in the RMDRCs. If a consensus cannot be reached at that level, the matter will be referred to the Chief Inspector (MEM) and the Director (MELP). Disputes which are not resolved at that level will be referred to the assistant deputy ministers of each ministry. The process in the Required Actions Memorandum does not spell out what will happen if the assistant deputy ministers are unable to resolve the dispute. The issue could be sent to cabinet for a decision or, alternatively, each ministry could be left to exercise its independent powers under the *Mines Act* and the Contaminated Sites Provisions. This aspect of the process will need further consideration. In any event, from a practical point of view, the ministries are confident that most, if not all, disputes would be resolved by the process, even though it does not have a specified end point. The process would apply to any actions by either ministry regarding contamination at mines sites including, for example, decisions by a MELP manager to order a site investigation or remediation.

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[186] Subject to MELP's powers under ss. 31 and 33, under permits issued under the *WMA* and in respect of spills.

[187] Subject to any exemptions as discussed above.

(25) **Limit MELP's exercise of powers under Contaminated Sites Provisions.** MELP will not exercise its Contaminated Sites Provisions powers in relation to core mining contamination at a mine site which is subject to a Mines Act permit, unless MEM agrees or the dispute resolution process results in a decision to exercise such powers.

Comment: MELP acknowledges that, in most cases, reclamation of mines with current *Mines Act* permits is adequately addressed by MEM under the *Mines Act*. Therefore, in such cases, there is no need for MELP to exercise its powers under the Contaminated Sites Provisions. Pursuant to this option, MELP will agree not to exercise those powers in respect of contamination at mine sites except where MEM agrees (which it may do if the *Mines Act* does not give adequate powers to deal with a problem) or where a decision is made through the dispute resolution process that MELP should exercise its powers. MELP could also exercise its powers in a situation where MEM did not have jurisdiction, such as might happen if contamination from a mining operation was outside the area in which the Chief Inspector could exercise his powers.

This change could be accomplished either through MELP policy or an agreement between the ministries. However, for this approach to be effective, there must be a level of confidence that the regional managers will adhere to the policy or agreement. This issue is considered in the discussion of Options (33) and (34).

Both ministries agree that this "hands off" approach by MELP should be restricted to core mining contamination. Core mining contamination is squarely within the experience and expertise of MEM, whereas other types of contamination, such as hydrocarbon contamination, are not.

This option has an added benefit for the mining industry in that it will reduce the fees payable to MELP under the Contaminated Sites Provisions.[188] As long as MELP does not get involved with a mine site, no fees will be payable under the Contaminated Sites Provisions.

(26) **Create a mine-specific contaminated sites regime.** Exempt mine site contamination from the Contaminated Sites Provisions and substitute a regime specifically designed to deal with contaminated mine sites.

Comment. One of the difficulties with the current regime is that the Contaminated Sites Provisions are designed to deal with contaminated sites in general rather than specifically addressing mine site contamination. Mine sites raise a number of distinctive issues. Mining is also one of the few industries where contamination issues are addressed under an existing, industry-specific regime. Some efforts have been made to tailor the Contaminated Sites Provisions to recognize the distinctive nature of mines. However, the Contaminated Sites Provisions remain somewhat ill-suited to mines. Also, any attempt to harmonize the fundamentally different regimes under the *Mines Act* and the Contaminated Sites Provisions will not be entirely successful. It is therefore appropriate to consider the creation of a regime which specifically focuses on mines but which contains many of the useful features of the Contaminated Sites Provisions.

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[188] See discussion of issue at page 58.

On a theoretical level, this option is in many ways the best option in that it avoids a piece meal attempt to harmonize two very different regimes. However, the option would require the expenditure of a significant amount of time and effort. It would therefore not resolve any issues in the short term, nor would there be any guarantee that such effort would be successful in creating a regime that would, in fact, work more effectively than the current regime, as modified by some of the options in this Part.

(27) **Strengthen the Mines Act enforcement powers.** Strengthen the Chief Inspector's enforcement powers under the Mines Act.

Comment: As discussed at page 48, there are issues regarding the sufficiency of the Chief Inspector's powers under the *Mines Act*. To the extent that MELP's powers under the Contaminated Sites Provisions are limited by application of any of the foregoing options it would be useful to review, and where appropriate improve, the Chief Inspector's powers under the *Mines Act*.

(28) **Improve Mines Act security process.** Establish clear criteria for determining the appropriate security requirements under the Mines Act and improve transparency of the process.

Comment: MEM is currently developing a formal policy on security in consultation with various stakeholders. As part of this process, the existing Bonding Protocol between MEM and MELP will be updated.

If changes are made to reduce the application of the Contaminated Sites Provisions to mine sites, it will be even more important that the process for obtaining security under the *Mines Act* is as rigorous, certain and transparent as possible.

(29) **Create a mine-specific risk assessment process.** Create a risk assessment process specifically designed to address risks at mine sites.

Comment: According to a number of industry representatives, the risk assessment process in the Contaminated Sites Provisions is not well suited to mines. This option proposes the development of a more suitable risk assessment process. MEM is currently developing such a process.

(30) **Public notification and consultation.** Increase the opportunities for public notification and consultation under the Mines Act.

Comment: Several stakeholders noted that the Contaminated Sites Provisions contain opportunities for public notification and consultation not found in the *Mines Act*. Improvements in this regard will be achieved, in part, if Option (31) requiring posting of *Mines Act* information on the site registry is implemented.

(31) **Enter Mines Act information on site registry.** Enter Mines Act permits, orders and other relevant information about contamination issues at mine sites on the site registry established under the Contaminated Sites Provisions.

Comment: Currently, information about contamination of mine sites will be included on the site registry created under the *WMA* if MELP is involved in dealing with the contamination under the Contaminated Sites Provisions. However if MELP is not involved, either because it decides not to be or because changes are made to the Contaminated Sites Provisions to restrict MELP's jurisdiction in respect of mine sites, such information will not be included on the site registry. In order for the benefits of the site registry system to apply to all mine sites, provision could be made to add permits, orders and other information (similar to the documents and information listed in section 26.3(2) of the *WMA*) generated under the *Mines Act*, to the site registry.

One of the objections to putting information about mine sites on the site registry is that it creates a safety concern by assisting spelunkers and others to locate and explore dangerous underground workings. We do not consider this a legitimate concern because: (i) if MELP were involved, information about the mine site would be entered on the site registry (ii) most mine sites with significant contamination concerns will come to the attention of those interested enough to search the site registry through other means in any event (iii) since searches on the site registry are done by location, finding a mine site using the site registry will be difficult and (iv) if this is a significant concern in a particular case, the *WMA* could be amended to provide that the registrar has a discretion not to enter information on the site registry if safety issues are a concern.

(32) **Delineation of ministry responsibilities.** Delineate the specific responsibilities of each ministry regarding all aspects of the regulation of mine sites.

Comment: Carrying out this exercise may be effective in eliminating some of the duplication in the work carried out by the ministries, and in reducing costs both to government and industry, without diminishing environmental protection. This proposal is contained in the Required Actions Memorandum.

(33) **Promote similar approaches by regional managers.** Establish mechanisms to minimize differences in the approach taken by regional managers and to promote compliance by regional managers with MELP policy.

Comment: MELP managers in different regions exercise their powers under the Contaminated Sites Provisions in different ways. Some rarely become directly involved with contamination issues at mine sites while others are more willing to use their powers to deal with such issues. The following may assist in minimizing differences in approach by managers:

- *provide training for the managers to ensure they understand the interplay of the Contaminated Sites Provisions and the Mines Act and that, in most cases, they have a discretion as to whether to exercise their powers under the Contaminated Sites Provisions;*
- *hold regular meetings or conference calls of MELP managers and MELP headquarters staff to discuss how matters are being handled in the regions; and*

- *establish MELP policies to provide guidance regarding when a manager should exercise his discretion to apply the Contaminated Sites Provisions at mine sites.*

(34) **Reduce or eliminate discretion of regional managers.** Reduce or eliminate differences in approaches taken by MELP managers in the regions by reducing or eliminating the managers' discretion by:

- *limiting the managers' authority to exercise certain Contaminated Sites Provisions powers by the issuance of a "designation letter" by the minister to the managers; or*

- *amending the WMA to place the discretion to exercise the Contaminated Sites Provisions powers in the hands of the Director, with the authority to delegate those powers to the managers.*

Comment: The purpose of this option is to ensure that the Contaminated Sites Provisions are administered the same way in all regions. Contrary to the approach in Option (33), which relies on dialogue, policy and increased training to promote similar approaches by managers, this option reduces or eliminates the discretion currently enjoyed by the managers.

The proposal in paragraph (a) to issue designation letters to the managers is an option considered by the CSIC Mining Subcommittee. The designation letters would set out the powers managers could exercise. However, it is unlikely that managers' powers can be fettered through designation letters as contemplated by this option. We believe that a statutory amendment would be required to enable this option to be exercised.

The proposal in paragraph (b) involves a fundamental change to the way the Contaminated Sites Provisions are currently administered. It would replace discretionary powers held by a number of regional managers with centralized power in the hands of the Director. The Director could then delegate powers to the managers and dictate how those powers are to be exercised. This is the scheme of the *Mines Act* where power resides with the Chief Inspector who has the discretion to delegate those powers to district inspectors. We have not researched the consequences of such a change sufficiently to recommend this option, although our impression is that it may have distinct advantages.

(35) **Delegation of MELP powers to MEM.** MELP delegates to MEM certain of the powers and functions of the managers under the Contaminated Sites Provisions.

Comment: Pursuant to section 28.3 of the *WMA*, MELP may delegate certain of its powers and functions under the Contaminated Sites Provisions to another ministry "to enhance coordination of Provincial regulatory activities". Draft MOU #1 contemplated the delegation of a number of powers to district inspectors including the power to issue remediation orders and to conduct public consultations and reviews. However, MOU #1 leaves MELP with the right, after consultation with MEM, to, among other things, order a preliminary site investigation, issue a remediation order and order a responsible person to carry out public consultation.

It is unclear how delegation would be of benefit. Even if powers are delegated to MEM staff, the managers will retain their powers under the Contaminated Sites Provisions. Therefore, the possibility of dual processes being applied at a mine site will remain. Further, given that MEM believes it already has sufficient powers to deal with issues at mine sites, it is unclear what use MEM would make of delegated powers. In any event, MEM indicated at the CSIC Mining Subcommittee that it was reluctant to take on these additional powers and responsibilities due to a lack of staff and expertise in some relevant areas.

This proposal appears to give powers to MEM they neither want nor believe they need, without eliminating the possible imposition of a dual administrative process.

(36) **Increase communication between ministries.** Promote a better understanding by managers and district inspectors of the work being carried out by their respective ministries through regular meetings, conference calls and training sessions.

Comment: The working relationship between MEM and MELP differs in different regions. On the basis that increased communication usually leads to increased understanding and respect, it would be useful to promote more communication between the ministries. The primary structure for improving communication between the ministries should be through RMDRCs. Issues between the ministries could also be a standing agenda item on regular MELP/MEM conference calls regarding contaminated sites.

(37) **Increase staffing and technical expertise.** Increase the level of staffing and the technical expertise in MEM and MELP offices.

Comment: All stakeholders expressed concern regarding insufficient staffing at MEM and MELP regional offices and the importance of ensuring that the offices have adequate technical expertise to deal with mine contamination issues.

(38) **Retain soil relocation provisions.** Section 28.1 of the Contaminated Sites Provisions relating to the movement of contaminated soil from a mine site to an off site location will continue to be applicable notwithstanding any exemption under the Contaminated Sites Provisions regarding mine sites.

Comment: Regulation of soil relocation is properly within the jurisdiction of MELP, not MEM. Therefore, the sections in the Contaminated Sites Provisions regarding soil relocation need to remain in effect regarding mine sites even if mine sites are exempted from the Contaminated Sites Provision. However, this option will not be relevant if the exemption applies to mining companies, not mine sites, since all of the Contaminated Site Provisions will continue to apply to mine sites.

(39) **Reconsider in three years.** MEM and MELP to review, with input from stakeholders, the effect of the proposed changes three years after implementation of the changes to determine whether they adequately address the concerns of stakeholders and provide adequate protection of the environment.

Comment: There have been extensive discussions among the stakeholders, including MEM and MELP, regarding the problems with the current system for regulating mine sites. All parties have shown a willingness to work together to resolve the problems. There are many steps which can be taken to improve the system short of providing a blanket exemption from the Contaminated Sites Provisions for all mine sites.

This option proposes that the issue of a general exemption be reconsidered after the effect of other, less drastic, changes is assessed. The review may confirm that a general exemption is not necessary if some of the other proposed changes are made. Alternatively, if MEM's procedures and policies are improved over time, there may be increased comfort among stakeholders in allowing mines to be regulated solely under the *Mines Act* system.

PART 7 - RECOMMENDATIONS

Part 7 sets out our recommendations to MELP and MEM based on our independent review of the existing regime for regulating contamination issues at mine sites.

We wish to make a few preliminary comments before setting out our recommendations:

- In order to simplify this report, we use a number of defined terms. Therefore, before reviewing this Part, it is critical that the reader review the definitions set out in Appendix B, in particular the definitions of "brownfield area", "contaminated site", "contamination", "core mining contamination", "greenfield site", "mine", "mine site", "mining companies", "owner", "operating mine" and "small scale exploration". Also reference should be made to the discussion in Part 6 regarding the options which are being recommended in this Part.

- Our recommendations are primarily intended to set out general principles for changes to the existing regulatory regime. They are not intended to resolve all of the details of those changes. If our recommendations are accepted, additional work will be necessary to translate the recommendations into specific statutory or regulatory changes, or ministry policies. The process of drafting the changes will undoubtedly reveal additional issues which will require consideration and resolution.

- Our recommendations borrow from proposals made in the Joint Submission and by the CSIC Mining Subcommittee and other stakeholders. However, our recommendations differ in some respects from all of these proposals. Consequently we suggest that the ministries consider further input from the stakeholders after they have had an opportunity to review this report. Our recommendations will undoubtedly be improved by input from those who will have to live with any changes made as a result of this report.

The following are our primary recommendations:

- Recommendation (1) – sections 31 and 33 of the *WMA* should not apply to the prevention and remediation of core mining contamination at, or originating from, mine sites.

- Recommendation (2) – either provide an exemption from liability, or limit liability, under the Contaminated Sites Provisions in respect of small scale exploration on greenfield sites.

- Recommendations (4) and (5) – provide limited exemptions from liability under the Contaminated Sites Provisions in respect of operating mine sites (including closed mine sites and advanced exploration sites).

- Recommendation (10) – MEM and MELP to make all decisions in respect of the reclamation/remediation of mine sites through the RMDRCs.

- Recommendations (11) and (12) – MELP not to exercise its powers under the Contaminated Sites Provisions in respect of core mining contamination unless MEM agrees, or the dispute resolution process results in a decision to exercise such powers.

A. SECTIONS 31 AND 33

(1) **Sections 31 and 33 not to apply to prevention or remediation of contamination at mine sites.**[189] Amend sections 31 and 33 of the WMA so that these sections do not give MELP managers the power to order prevention or remediation of contamination at, or originating from, a mine site.

B. EXPLORATION SITES

(2) **Exemption or limitation of liability for small scale exploration on greenfield sites.**[190, 191, 192] Either (i) exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site or (ii) limit the maximum liability of a mining company in respect of a contaminated site to the remediation costs attributable to the mining company's activities, if:

- *the contaminated site is a greenfield site;*
- *the company has only carried out small scale exploration at the site;*
- *the company has transferred or surrendered its exploration permit and its tenure regarding the site; and*
- *in respect of a transfer, the company was in compliance with its exploration permit immediately prior to the transfer and, in respect of a surrender, the company has satisfied all requirements of its exploration permit.*

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[189] As discussed at page 66, this change should be accompanied by an amendment to the Contaminated Sites Provisions giving a manager the power to prevent contamination from occurring.

[190] Sub items (i) and (ii) are alternate approaches. If approach (ii) is chosen, consideration should be given to applying the approach to all exploration work, not just small scale exploration, as discussed at page 69.

[191] This recommendation relates to (i) contamination of all kinds and is not limited to core mining contamination; and (ii) contamination which has migrated or been released from the subject contaminated site.

[192] One way to limit the maximum liability of a mining company is to provide that a mining company which satisfies the criteria set out in this Recommendation will be determined to be a minor contributor.

(3) **Exemption or limitation of liability regarding brownfield areas**[193]**.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site which includes a brownfield area, to the extent of the existing contamination on the brownfield area, if:

- *the company has only carried out small scale exploration at the site;*
- *the company is in compliance with its exploration permit;*
- *the exploration work is not carried out within, or in close proximity to, the brownfield area;* *or*
- *the exploration work is carried out within, or in close proximity to, the brownfield area and:*
    - & *the company carries out a baseline survey of the existing site conditions and, where appropriate, undertakes a monitoring program of those conditions while it has tenure regarding the contaminated site; and*
    - & *MELP and MEM approve the proposed exploration work as set out in the exploration permit (subject to the dispute resolution process);*

except to the extent the mining company exacerbates the existing contamination.[194]

C. OPERATING MINE SITES[195]

(4) **Exemption regarding operating mine sites**[196]**.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site if:

- *the company has transferred or surrendered its Mines Act permit, and its tenure regarding the contaminated site;*

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[193] This recommendation relates to (i) contamination of all kinds and is not limited to core mining contamination; and (ii) contamination which has migrated or been released from the subject contaminated site.

[194] We have limited this exemption to be available in respect of small scale exploration work. However, as discussed in the comments regarding Option (10) at page 73, the ministries should consider whether this limitation is necessary where the exploration work is not carried out within, or near to, the brownfield area.

[195] Operating mine sites are operating and closed mine sites in respect of which a section 10 *Mines Act* permit is in place. For the purposes of this Part, the term will also be deemed to include exploration sites which are not small scale exploration sites, that is, exploration sites in respect of which the exemptions in Recommendations (2) and (3) are not available.

[196] This recommendation, as written, relates to contamination of all kinds and is not limited to core mining contamination. The exemption could be drafted so that the exemption could apply to all types of contaminations, or only core mining contamination, as agreed by MEM and MELP in a particular case. The recommendation also relates to contamination which has migrated or been released from the subject contaminated site.

- *in respect of a transfer, the company was in compliance with its permit immediately prior to the transfer and, in respect of a surrender, the company has satisfied all requirements of its permit;*

- *in respect of a transfer, security satisfactory to MEM has been posted; and*

- *MEM and MELP approve the exemption (not subject to the dispute resolution process)*[197].

(5) **Government indemnity**[198]. An indemnity from the government under the Financial Administration Act be available to a mining company in respect of contamination on, or originating from, an operating mine site, provided that the process to obtain such indemnity is improved to be more transparent and subject to public consultation.

(6) **Exemption for post-mining users.**[199] Exempt a person who uses a contaminated site which includes a reclaimed mine site from being a "responsible person" under the Contaminated Sites Provisions in respect of the contaminated site to the extent of the existing contamination from the reclaimed mine site if:

- *the person does not acquire title to the site or lease the contaminated site for a term of more than 30 years (including options);*

- *prior to the person's post-mining use of the site, the person was not a "responsible person" in respect of the site; and*

- *the person uses the site for a use specified under the reclamation permit for the site or for another use that is approved by MEM and MELP (subject to the dispute resolution process);*

except to the extent the person exacerbates the existing contamination.

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[197] Note that the approval by MEM and MELP required in order for this exemption to apply is not subject to the dispute resolution process. In other words, both ministries have a veto power as to whether an exemption will be given.

[198] Note that Recommendations (4) and (5), although similar in effect, will likely be applicable in different situations - Recommendation (4) where the site poses little environmental risk and Recommendation (5) where political considerations, such as employment, are considered sufficiently important to require transfer of the environmental risk regarding the site to the taxpayers.

[199] This recommendation relates to contamination of all kinds and is not limited to core mining contamination. However, it does not provide an exemption, or limitation of liability, for any pre-existing contamination other than pre-existing contamination relating to the reclaimed mine site. The post-mining user's liability regarding such contamination will be dependent on whether any existing exemptions in the Contaminated Sites Provisions apply.

(7) **Restrictive covenant.** Require that a restrictive covenant be placed on a contaminated site which includes a reclaimed mine site, restricting the use of the site to the uses specified in the reclamation permit and any other uses that MEM and MELP approve (subject to the dispute resolution process).

(8) **Exemption for directors, officers, employees and agents.** Exempt directors, officers, employees and agents of a mining company from being "responsible persons" under the Contaminated Sites Provisions to the extent that the mining company is granted an exemption in respect of an exploration site or an operating mine site pursuant to these Recommendations.

D. "GOOD SAMARITAN" REMEDIATION

(9) **Exemption for "good samaritan" remediation.** Exempt a mining company from being a "responsible person" under the Contaminated Sites Provisions in respect of a contaminated site as a result of carrying out "good samaritan" remediation if:

- *prior to commencing the remediation, the mining company was not a "responsible person" in respect of the site; and*
- *MEM and MELP approve of the work (subject to the dispute resolution process),*

except to the extent the contamination is caused or exacerbated by work carried out negligently by the mining company.

E. MAJOR ADMINISTRATIVE ISSUES

(10) **One window approach.** Use the RMDRCs as a "one window" approach for all decisions in respect of remediation/reclamation of mine sites.

(11) **Dispute resolution process.** Create a process to resolve disputes between MEM and MELP regarding the remediation/reclamation of mine sites.[200]

(12) **Limit MELP's exercise of powers under Contaminated Sites Provisions.** MELP will not exercise its Contaminated Sites Provisions powers in relation to core mining contamination at a mine site which is subject to a Mines Act permit, unless MEM agrees or the dispute resolution process results in a decision to exercise such powers.

F. MISCELLANEOUS ISSUES

(13) **Improve Mines Act.** Make the appropriate statutory or regulatory amendments or policy changes to:

- *strengthen the Chief Inspector's enforcement powers under the Mines Act.*[201]

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[200] Such a process is contained in the Required Actions Memorandum.

[201] Discussed at page 48.

- *establish clear criteria for determining the appropriate security requirements under the Mines Act, increase bond amounts where required*[202] *and improve transparency of the process;*

- *create a risk assessment process specifically designed to address risks at mine sites;*[203]

- *increase opportunities for public notification and consultation under the Mines Act;*[204] *and*

- *enter Mines Act permits, orders and other relevant information about contamination issues at mine sites on the site registry established under the Contaminated Sites Provisions.*

(14) **Delineate ministry responsibilities.** Delineate the specific responsibilities of each ministry regarding all aspects of the regulation of mine sites.

(15) **Promote similar approaches by regional managers.** Establish mechanisms to minimize differences in the approach taken by MELP regional managers.[205]

(16) **Increase communication between ministries.** Promote a better understanding by MELP managers, and by MEM district inspectors, of the work being carried out by the other ministry through regular meetings, conference calls and training sessions.

(17) **Increase staffing and technical expertise.** To the extent that the comments by stakeholders that there is an urgent need to increase staffing and technical expertise at MEM and MELP are correct, increase the level of staffing and the technical expertise in MEM and MELP offices.

(18) **Reconsider in three years.** MEM and MELP to review, with input from stakeholders, the effect of the proposed changes three years after implementation of the changes to determine whether they adequately address the concerns of industry and provide appropriate protection of the environment.

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[202] Including the $500 bond for exploration sites.

[203] This process should be used regardless of whether the risk assessment is being conducted under the *Mines Act* or the Contaminated Sites Provisions.

[204] Discussed at page 62.

[205] Examples of suggested mechanisms for accomplishing this goal are set out in Option (33). Note that this recommendation does not involve a statutory/regulatory reduction in MELP regional managers' discretion as contemplated in Option (34).

APPENDIX - A

May 30, 2000

TERMS OF REFERENCE FOR EXTERNAL REVIEW OF LIABILITY PROVISIONS FOR MINE RECLAMATION AND ENVIRONMENTAL PROTECTION UNDER THE *WASTE MANAGEMENT ACT* AND *MINES ACT*

1.0 PURPOSE

The purpose of this contract is to retain an independent contractor to undertake a comprehensive review of the liability provisions for mine reclamation and environmental protection of land and waterbodies affected by mining under the *Waste Management Act* and the *Mines Act*. This review will include identifying environmental liability issues related to mines permitted under the *Mines Act* including mineral exploration properties and how the current provisions impact the transfer of mining properties and business transactions.

Recommendations will be developed to ensure liability provisions for mine reclamation meet overall environmental protection objectives of government and help encourage a sustainable mining industry.

1.2 TERM

The term of the contract will be for the period May 25, 2000 to July 17, 2000.

1.3 QUALIFICATIONS

The contractor will have knowledge of the *Mines Act*, the Health, Safety and Reclamation Code, the *Waste Management Act* and Contaminated Sites Regulation, specifically regarding provisions for environmental liability related to mining.

1.4 BACKGROUND

Environmental protection and reclamation of mines have been regulated by the Ministry of Energy and Mines (MEM) for over 30 years under the *Mines Act* and the Health, Safety and Reclamation Code for Mines in British Columbia. The *Mines Act* permitting process, set out in section 10, which has been used as a model by many other jurisdictions in the world, establishes broad objectives, requires a mine plan, and a program for protection and reclamation of the land and waterbodies prior to mining. Regional Advisory Committees, made up from Federal and Provincial Government agencies, First Nations, and public representatives are required to be established pursuant to section 9 of the *Mines Act* to review applications for mine approvals and reclamation permits. Regional Advisory Committees have functioned well and provide the Ministry of Environment, Lands and Parks (MELP) with extensive involvement in mine development reviews, the establishment of permit conditions, and input into provisions for reclamation security to cover environmental liability.
Prior to 1997, mines were regulated under the *Waste Management Act* through

effluent permits, control of spills and regulation of special wastes. Enforcement of off site pollution was accomplished through Pollution Prevention Orders and Pollution Abatement Orders which remain as regulatory enforcement provisions in the amended *Waste Management Act*.

On April 1, 1997 amendments to the *Waste Management Act* became law and the Contaminated Sites Regulation came into effect. These changes established numeric standards for soil and water which defined a contaminated site. This provides legal decision-making powers to the Regional Waste Manager (MELP) to make determinations to identify a contaminated site, to request site investigations, and to order remediation of identified contaminants.

This legislative change has also more formally addressed responsibilities for environmental liability. These are regulated differently under the *Mines Act* and the *Waste Management Act*. Under the *Mines Act*, when a mine has been sold the Chief Inspector of Mines must be satisfied that the new owner has the financial and technical capability to meet all the environmental requirements of their permit. The new owner must also post sufficient security to provide reasonable assurance that Government funds will not have to be used to comply with permit conditions. Once the Chief Inspector of Mines is satisfied that these criteria have been met, liability is transferred wholly to the new Permittee.

Under the *Waste Management Act* liability is absolute, retroactive, joint and several. Persons responsible for contamination can include past and current owners of a site, operators of a site, and producers and transporters of contaminants.

1.5 DUTIES

1. Conduct in person interviews with relevant MELP staff to review the remediation liability and financial security provisions of the *Waste Management Act*, Contaminated Sites Regulation and associated policies and procedures, to gain understanding of:
   - Rationale for the remediation liability and financial security provisions of the *Waste Management Act* for mines.
   - Application of these provisions to mine sites since they came into effect on April 1, 1997.
   - MELP and MEM staff views of the impacts of the *Act* on remediation of mine sites; and
   - MELP and MEM staff interpretation of any criticisms of these provisions and their application.
2. Conduct in person interviews with relevant MEM staff to review the remediation liability and bonding provisions of the *Mines Act*, and associated policies and procedures on this issue to gain understanding of:

- Rationale for the reclamation liability and bonding provisions under the *Mines Act*;
- Application of these provisions;
- MEM and MELP staff views on the impacts of these provisions; and
- MEM and MELP staff interpretation of any criticisms of these provisions.

3. Conduct in person interviews with representatives of the mining industry, local governments, business community, First Nations, and non-governmental environmental groups (refer to list below) to gain an understanding of the issues and options from their perspective (including comments on the bullets under points 1 and 2 above).

4. Propose and evaluate options for addressing liability provisions for mine reclamation and environmental protection of land and waterbodies affected by mining. Options will include recommending circumstances where liability provisions could be addressed wholly under the *Mines Act*, wholly under the *Waste Management Act* or where a combination of legislative provisions are necessary to protect the public.

5. Report results of interviews in a summary paper with recommendations to address identified liability issues to the appropriate Assistant Deputy Ministers of MELP and MEM.

1.6 List of Mining Industry, Business Community, Local Government, and Environmental Groups to be Consulted

West Coast Environmental Law Association
Mining Association of British Columbia
Environmental Mining Council
Business Council of British Columbia
Union of British Columbia Municipalities
Canadian Bankers' Association
Cominco
Placer Dome
Teck Corporation
Noranda
Insurance Bureau of Canada
Canadian Bar Association
Sierra Legal Defence Fund
BC and Yukon Chamber of Mines
First Nations representative (s) to be identified

The final document will be made available to the public.

APPENDIX B

DEFINED TERMS

We use the following defined terms in this report:

"abandoned mine" has the same meaning as in the *Mines Act*, i.e. a mine for which all permit obligations have been satisfied and in respect of which the mineral claims have reverted to the Crown;

"Bonding Agreement" means the document entitled "Bonding Agreement Regarding the Administration and Regulation of the Mining Industry" entered into between MEM and MELP and signed August 22, 1991 by MEM and July 10, 1991 by MELP. A copy of the Bonding Agreement is attached as Appendix I;

"brownfield area" means an historic mine site other than a mine site where only small scale exploration has taken place;

"Chief Inspector" means the chief inspector of mines under the *Mines Act*;

"closed mine" has the same meaning as in the *Mines Act*, i.e. a mine where all mining activity has ceased but in respect of which the owner remains responsible for compliance with the *Mines Act* and the Code;

"Code" means the Health, Safety and Reclamation Code for Mines in British Columbia established under the *Mines Act*;

"contamination" has the same meaning as in the *WMA*, i.e. the presence in soil, sediment or groundwater, of special waste or another substance in quantities or concentrations exceeding prescribed criteria, standards or conditions, and includes waste rock, tailings, ML/ARD and associated contamination and contamination from mineral concentrates, petroleum hydrocarbons, explosives, reagents, solvents, pesticides and other chemicals and hazardous substances associated with maintenance, fuelling, laboratory, concentrator or storage facilities at a mine site;

"contaminated site" has the same meaning as in the *WMA*, i.e. an area of land in which the soil or any groundwater lying beneath it, or the water or underlying sediment, contains a special waste, or another prescribed substance in quantities or concentrates exceeding prescribed criteria, standards or conditions;

"Contaminated Sites Provisions" means the provisions contained in Part 4 (Contaminated Sites Remediation) of the *WMA* and the CSR;

"core mining contamination" means waste rock, tailings and ML/ARD and associated contamination. It does not include mineral concentrates, petroleum hydrocarbons, explosives, reagents, solvents, pesticides and other chemicals and hazardous substances associated with maintenance, fuelling, laboratory, concentrates or storage facilities at a mine site;

“CSIC Mining Subcommittee” means the Mining Subcommittee of the Contaminated Sites Implementation Committee;

“CSIC Mining Subcommittee Options” means the document entitled “Options to Apply the Contaminated Sites Regulation at Mine Sites” prepared by the CSIC Mining Subcommittee. A copy of the CSIC Mining Subcommittee Options is attached as Appendix F;

“CSR” means the Contaminated Sites Regulation under the *WMA*;

“Director” means the director of waste management under the *WMA*;

“exploration site” means a site where “exploration activities”, as defined in the MX Code, are undertaken to search for and develop coal and minerals, including activities involving small scale exploration and bulk sampling;

“greenfield site” means a site where there has been no prior mining activity other than small scale exploration;

“Joint Submission” means the submission entitled “Addressing Mining Liability Concerns for Public and Industry”, November 28, 2000, prepared by Karen Campbell, Glenda Ferris, Keith Ferguson, Walter Kuit, David Parker and Alan Young. A copy of the Joint Submission is attached as Appendix E;

“manager” means a regional waste manager under the *WMA*;

“MELP” means Ministry of Environment, Lands and Parks;

“MEM” means Ministry of Energy and Mines;

“mine” or **“mine site”** have the same meaning as “mine” in the *Mines Act* and generally means the area disturbed by mining activity, including the area on which buildings or machinery are located and wastes are stored and also including a place designated by the Chief Inspector as a mine. “Mine”, “site” or “mine site” include exploration sites and operating mine sites;

“mining companies” includes individuals operating at a mine site such as individual free miners;

“ML/ARD” means metal leaching and acid rock drainage;

“MOU #1” means the draft memorandum of understanding between MEM and MELP entitled “Memorandum of Understanding on Protocol for the Regulation and Administration of Contaminated Sites Between the Ministry of Environment, Lands and Parks and the Ministry of Energy and Mines”;

“MX Code” means the Mineral Exploration Code contained in the Code as Part 11;

“operating mine” and **“operating mine site”** means a currently operating mine and a “closed mine”, as defined in the *Mines Act*, in respect of which a section 10 *Mines Act* permit is in place.

(Also note that in Section C of each of Part 6 and Part 7 of this report, "operating mine" also includes exploration sites which have been subject to exploration activities above the small scale exploration threshold);

"owner" means the "owner", "manager" or "agent" of a mine as such terms are defined in the *Mines Act*;

"remediation" has the same meaning as in the *WMA*, i.e. action to eliminate, limit, correct, counteract, mitigate or remove any contaminant or negative effect on the environment or human health of any contaminant;

"Required Actions Memorandum" means the draft memorandum of understanding between MEM and MELP entitled "Memorandum of Understanding Between the Ministry of Environment, Lands and Parks and the Ministry of Energy and Mines". A copy of the Required Actions Memorandum is attached as Appendix H;

"RMDRC" means Regional Mine Development Review Committee;

"small scale exploration" means any exploration work involving an amount of land disturbance or excavation of rock which is below a threshold to be determined by MEM and MELP but which, for the purposes of this report, is assumed to be exploration work below the bulk sampling threshold, as discussed at page 73; and

"*WMA*" means the *Waste Management Act*.

APPENDIX C

STAKEHOLDER INPUT

To assist in the preparation of this report, we interviewed a number of parties affected by the issues addressed in the report. Some parties also provided us with written comments. The parties we interviewed or who provided written comments are listed below.

MEM Representatives	Joan Hesketh, Fred Hermann, John Errington, Gregg Stewart, Andrew Wale, Ed Beswick, Bill Price
MELP Representatives	Don Fast, Margaret Eckenfelder, Ron Driedger, Doug Walton, Bob Hart, John Ward, Rick Crozier, Joe Negraeff, Terry Roberts, Craig Stewart
Environment Canada	Mike Nassichuk
West Coast Environmental Law Association	Karen Campbell
Sierra Legal Defence Fund	Karen Wristen
Environmental Mining Council of British Columbia	Alan Young
B.C. Yukon Chamber of Mines	Brian Abraham
Mining Association of British Columbia	Lorne Grasley
Cominco	Walter Kuit
Placer Dome	Keith Ferguson
Teck	Michael Filion
Taseko	Tom Milner
Noranda	Steve Hamilton
Highland Valley Copper	Mark Freberg
Tahltan Joint Council	Glenda Ferris
Ktunaxa Kinbasket Tribal Council	Vic Clement, Resource Protection Manager

Carrier Sekani Tribal Council	Mavis Erickson, Tribal Chief
Nak'azdli Traditional Territory	Tina Erickson, Treaty Coordinator (on behalf of Chief Leonard Theras)
Member of public who sits on a RMDRC	Glenda Ferris
Union of British Columbia Municipalities	Ken Vance
Department of Fisheries and Oceans	Bonnie Antclerf

Note: At the outset of this project we had intended to include stakeholder comments in the final report. However some stakeholders were uncomfortable with their comments being included in the report. For this reason, summaries of stakeholder comments are not included in this report.

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APPENDIX D

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APPENDIX - E

I.

ADDRESSING MINING LIABILITY CONCERNS FOR PUBLIC AND INDUSTRY

JOINT SUBMISSION

November 28, 2000

CONTEXT

Industry has raised concerns about duplication of site inspection requirements and fees, unrealistic contaminant benchmarks for mine sites, and, potentially unfair allocation of liability to companies during various stages of mineral exploration, mine development, and minesite transfer under the Contaminated Sites Regulation (CSR) of the *Waste Management Act* (WMA).

Environmental representatives have expressed the need to maintain the integrity of the liability regime under the WMA and to ensure that the public is not bearing the burden of remediation for contamination resulting from mine operations, and to guarantee legal requirements that account for environmental risk.

The need for clear and strong safeguards to protect the public from assuming the cost of environmental liability from mineral exploration and mine development phases, including closed and decommissioned sites, is complicated by several inherent conditions that are not now addressed by the joint mechanisms used in implementation of the *Mines Act* (MA) and WMA. Over the past few months, various options have been put forward as a result of stakeholder consultation to address these concerns. Some key issues and solutions relating to the administrative coordination between the two Acts and the two agencies have been identified by the Mining Sub-Committee of the Contaminated Sites Implementation Committee. We understand that these issues are being considered in the development of an interagency Memorandum of Understanding (MoU) under a "Required Actions" recommendation from the Committee. Other concerns, specifically relating to liability have not yet been resolved through this committee.

Given our shared concern and interest in having a meaningful and effective regulatory regime for mining operations, we have prepared this brief for consideration by MEM, MELP and stakeholder groups. An efficient and comprehensive regulatory framework should encourage environmental protection through an accurate accounting of risk and site maintenance. Our concerns can be characterized under two broad headings: liability and administrative/operational issues.

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* This submission has been prepared jointly by Karen Campbell, Glenda Ferris, Keith Ferguson, Walter Kuit, David Parker and Alan Young

This brief is primarily focused on making recommendations on the issue of liability, since we recognize that administrative/operational solutions will have to be developed in consultation with representatives of both ministries and involved stakeholder groups. A list of potential issues is identified at the end of this brief. We also recognize that the draft MoU for the Regulation and Administration of Contaminated Sites between MELP and MEM has been reintroduced, and will be used as a basis for developing solutions to the administrative/operational issues. Our view is that in order for effective solutions to be created that address the concerns that have given rise to this brief, both liability and administrative/operational requirements must be considered together.

Moreover, industry feels that the current assignment of liability under the WMA is hindering legitimate opportunities for mine development and the redevelopment of historically disturbed properties in BC. Therefore we recommend that the province move quickly to resolve these issues, particularly those related to liability associated with exploration properties.

INTRODUCTION

Unlike many other industrial activities, mineral exploration and mine development can create environmental contamination primarily through disturbance of the land surface and underlying bedrock. Moreover, since mining can entail extensive surficial, hydrological and hydrogeological disturbances, it can give rise to particular complications of contaminant transport that could affect surrounding watercourses. While baseline surveys may identify whether a mineralized area is affected by naturally elevated trace metals, these are rarely completed until a mine development is imminent and databases are not typically available for older minesites.

The tabulation of environmental and economic liability[1] must account for the risk posed by mine operations, including post closure, where there remains uncertainty regarding geochemical and geotechnical stability and the re-establishment of natural watershed patterns that may accelerate transport of contaminants

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[1] By economic liability we mean the immediate costs of remediation, the cost of implementing the monitoring protocols required by the CSR; and the long term security bonding required under the MA.

All of these concerns lead back to the need to plan, at early stages, and to revisit these plans throughout mineral exploration and mining operations and to implement de commissioning and closure measures that minimize environmental liability and risk. The maintenance of an incentive-based regulatory system is required that will encourage industry to account for its potential environmental and economic liability in corporate decision making and that rewards companies for proactive approaches to reclamation. Regulatory systems that encourage the effective management of environmental risks in all phases of mining activities will provide a solution to most of our shared concerns.

PRINCIPLES

We have identified a number of key principles that underlie this submission:

- Affirmation off the principle that operators and associated parties shall provide all funds necessary to ensure protection of human health and the environment and that the public is not required to assume either the environmental or economic liability of any mining disturbance; and recognition that appropriate bonding requirements are an essential element for the resolution of some liability issues.
- Prevention of any future orphaned or abandoned mine sites with unfunded environmental liabilities in BC through the creation of clear standards, incentives and disincentives which guide responsible design planning and implementation, operation and reclamation closure practices. Requirements under the regulatory framework must comprehensively account for the present and potential risks to environmental receptors.
- Recognition that mineral exploration and minesite conditions represent unique patterns of potential contaminant distribution and hazard relative to other sectors regulated by the WMA and, as such, require some specific treatment to address these unique properties.
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- Protection of the ability of regulators to take action to pursue remediation measures for mine site contamination and enforce the requirements of environmental legislation, particularly where necessary to protect the public health and safety.
- Environmental legislation should operate as efficiently as possible to minimize administrative requirements and maximize environmental protection. In particular, the procedural and liability requirements of environmental legislation should no

operate to penalize exploration on, and transfer of, mineral leases or developed mine properties unless issues of environmental risk have not been addressed.

- Procedures should be standardized for environmental baseline inventories and comparative analysis to determine the existence of natural exceedances during initial phases of mineral exploration , pre-development phases of mining activity and the redevelopment of brownfield sites.
- The need for clear public notification, provision of information and consultation relating to mining liability decisions.
- The need to ensure that both MELP and MEM have adequate resources and staff expertise available for inspection and monitoring within an efficient framework.

Based on the principles above, we propose the following recommendations for modifying the liability provisions of WMA and improving coordination between the MA and the WMA.

1. GREENFIELD EXPLORATION

a) Greenfield exploration of less than 1,000 tonnes

Concerns were raised by industry about exploration sites being subject to liability provisions simply because of mineral tenure rights and therefore becoming part of the liability chain for the impacts that may arise from sites in the future. This problem is seen to potentially discourage new exploration ventures from being undertaken across the province and deter further assessment or development work being done at properties by new owners.

Environmental representatives are concerned about the possibility of an exemption that would automatically include advanced exploration ventures and bulk sampling projects, which may pose significant environmental risk and substantial liability claims.

Proposal

- *Exemption from requirements of Part 4 of WMA and sections 31 and 33 for situations where companies are in good standing under Mines Act section 10 permits, and who have undertaken total excavation of rock (including ore, waste rock and mineralized overburden) of no more than 1,000 tonnes on site.*
- *Establishment of an adequate interagency referral loop for notice of work requirements under section 10 of the Mines Act*

for greenfield exploration in the Mineral Exploration Code to enable an initial review by MELP.

At recent CSIC mining subcommittee meetings, government, industry and public participants discussed a compromise that would reduce liability concerns for the limited risks and impacts of small scale exploration activities while still capturing liability for larger, potentially higher impact sites of advanced exploration where major excavation(s)/disturbance has occurred.

The recommended general threshold for exemption from Part 4 and sections 31 and 33 of the WMA was those sites in compliance with MA section 10 permits, where there is less than 1,000 tonnes of total rock excavation (including ore, waste rock and mineralized overburden). **Environmental remediation requirements should be minimal, generally well-defined and could be safely covered through the notice of work and bonding requirements under the Mineral Exploration Code.**

Referral of bonding procedures, calculations and final decision should be included in Regional Mine Development Review Regional Committee (RMDRC) framework.

b) Greenfield exploration of more than 1,000 tonnes and less than 10,000 tonnes (Pre Bulk Sampling)

To avoid being involved in a chain of liability for future mine developments subsequent to low impact exploration activities on a greenfield site, industry is also seeking a means of indemnification for situations where exploration work of greater than 1,000 tonnes, but less than 10,000 tonnes, occurs on a site, and where risks can be shown to be fully addressed through a bond or completion of reclamation.

Environmental representatives agree that in certain limited situations, a conditional exemption could be made available for this scale of exploration site, recognizing that this exemption would be the exception rather than the rule where environmental risks are demonstrably low, and a strong and specific business case is made for the obstacle posed by the existing liability obligations.

Proposal

- ***Exemption from Part 4 of the WMA and retroactive components of sections 31[1] and 33***

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[1] Based on a review of section 31, the retroactive components are sections [illegible]

- *where the issue has been considered by RMDRC and where Regional Waste Manager and Regional Mine Manager recommend exemption; and where appropriate bonding requirements are established.*
- *Those currently responsible for contamination would be subject to pollution abatement or prevention orders under ss. 31 and 33.*
- *Public presence at RMDRC should be institutionalized so that there is an ability to provide input, review and assessment of proposals.*
- *The creation of an integrated site assessment/site investigation regime, to be developed through the MoU arising from the work of the CSIC mining subcommittee.*

This proposal would see a limited exemption from liability being made available in order to allow a company to transfer property where some exploration has occurred and where there is no high risk of long term remediation. Sign off by the RMDRC would be adequate in such cases, as it would include sign off by representatives of both MELP and MEM.

The issues associated with increased public input and access to information regarding the RMDRC process may need to be addressed at the operational level in the MoU discussions.

2. BROWNFIELD EXPLORATION SITES

Similar concerns have been raised for brownfield sites as have been raised for greenfield sites.

Industry is concerned that potentially productive exploration sites associated with previous mining operations are not being developed because new proponents will acquire liability for harm and impacts created by previous mine operators. As well, there may be disincentives for companies to clean-up historic sites within their claim areas where they face potential for beig being included in the liability chain, despite not being actively involved in actual disturbance or production activities on the

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and (1)(c). In order to ensure that those currently responsible for pollution can be subject to a pollution abatement order, section 31(b) would need to be strengthened to include owners, occupiers, and persons who are causing or authorizing the pollution at the site (i.e. text similar to that in section 1(c) but in the present tense).

Based on a review of section 1(1) the retroactive components consist of wording such as "previously held", "previously discharging", or "previously owned or occupied", would no longer apply.

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site.

Environmental representatives recognize that there is a desire to explore incentives for historic mine clean-up where the net result is a lowering of environmental risk and public clean-up costs. In some situations, historic liability operates as a constraint to this activity. It is recognized, however, that superficial assessments and insufficient engineering design for remediation of old sites will not "solve" or improve conditions and may exacerbate problems on the site. Further, there are considerable practical challenges of the requirement to distinguish between new and old impacts in areas that contain historic minesites.

We propose a similar solution, based upon the same tonnage limits as above, with one modification: a site assessment should be completed through a cooperative effort as above, prior to any work occurring on site to ensure that an effective mitigation and restoration plan has been developed and to ensure that current contamination at a site is fully documented andnot exacerbated.

Proposal

a) Brownfield sites of less than 1,000 tonnes

- *Exemption from Part 4 of the WMA and sections 31 and 33 where issue has been considered by RMDRC; and where Regional Waste Manager and Regional Mine Manager recommend exemption.*
- *Develop a site assessment, remediation and monitoring regime to address risks from previous activities, and identify the relationship between new activities and existing contamination sources.*

c) Brownfield sites of more than 1,000 tonnes

- *Strengthen/clarify bonding requirements for dealing with specific risks associated with brownfield sites, including the development of a joint MELP/MEM approval protocol.*
- *Establish a site investigation, remediation and monitoring regime, with appropriate public notification and consultation.*
- *Exemption of liability for disturbed area from Part 4 of WMA and retroactive components of sections 31 and 33, where company meets clear criteria (i.e. company does not disturb old workings, did not previously operate the site; where potential environmental risk in the event of further exploration in the non-disturbed area is not significant; and*

where monitoring program and subsequent development activities are fully bonded.)

- *Current operators would be responsible for contamination on the site (for portions they are disturbing, or for the impacts caused off site by their disturbances) and would be subject to pollution abatement or prevention orders under ss. 31 and 33.*

- *Exemption would be forfeited where monitoring results indicate that contamination has worsened as a result of the ongoing exploration (criteria to be developed to clarify that where situation worsens, then new operator would be responsible for returning site to previously contaminated level).*

A company seeking to carry out exploration activities on a previously mined site could seek a WMA exemption for the disturbed portion of the property in return for undertaking a site assessment and monitoring process to define and track key ecological indicators on site and effects of contaminant transport to the receiving environment. Exploration on the greenfields portion of the property that did not affect previous workings would be handled as per other greenfield sites described above.

The exemption would be contingent on the company's ability to demonstrate no additional risks or potential future impacts arising from its activities. The outcome of this process may range from a WMA exemption where there is no disturbance of existing workings, to bonding requirements for longer term monitoring program for the site. All exemptions for more complex programs which involve disturbance or use of historical workings (including adits) should be reviewed by MEM and MELP with a public consultation guarantees.

The purpose of the assessment and monitoring program would be to distinguish between the greenfield and brownfield portions of the site; to analyze the extent of existing contamination stemming from baseline conditions, historical industrial disturbance vs current activities; and to monitor any changes occurring as a result of new exploration activities.

The site assessment and monitoring program would need to be designed in a way which removes major economic disincentives for exploration while maintaining the principle of accountability for activities which create contaminant hazards and increase environmental risk. It would provide baseline data and a full description of the history of the site. The scope and details of the baseline assessment and monitoring would depend upon the proximity and relationship of historical workings to the proposed new project.

Details of the site assessment procedures and methodology will need to be addressed at the operational level. Any activity on the site would be evaluated against this assessment, in order to determine whether activities are increasing or decreasing the level of contaminants on site. Should the impacts and hazard situation worsen as a result of the exploration, the limited exemption would be forfeited.

3. MINE SITE TRANSFER

The current system does not contemplate the complete transfer of liability to a new owner after the sale of a mine property. However, under the *Financial Administration Act*, government has the authority to indemnify or guarantee the performance of private obligations. To this end, MELP and MEM have developed a protocol establishing criteria for indemnification for liability under the WMA and the MA. Only one mine has been subject to the FAA indemnification process has been concluded to date, fully transferring all past liability to a new owner/operator.

Industry maintains that the threat of ongoing liability under the WMA inhibits the transfer of properties and thus the future development of minesites by other companies. Where potential liability exists for future impacts unrelated to the company's previous actions, industry is concerned that these companies cannot afford to sell their sites and transfer attendant potential liabilities to other mining operators. Industry representatives have noted that, while the FAA mechanism addresses the desire for indemnification, it is a closed process that could benefit from being more transparent and adapted to mining related risks.

Environmental representatives are concerned about the potential, through sale of properties, to offload problem sites to less capable or solvent companies that may not be able, financially or technically, to handle the environmental management requirements. The result could be the default of these costs to the public. Without clear liability requirements and associated bonding mechanisms, the paper transfer of properties along with an exemption from future liability could unjustly indemnify past owners who should be responsible to ensure that long term care of the site is achieved. Environmental representatives recognize that there will be occasional circumstances where government will choose to indemnify private parties, and to the extent that this occurs at all, would like to ensure that any contemplated indemnification agreements are concluded in as open, accountable and transparent a manner as possible.

Proposal

- *Priority task is strengthening bonding requirements, information transfer and shared decision-making protocol under the MA and WMA.*

- *Strengthen the accountability mechanisms in the FAA protocol to include timely notification, public/stakeholder input, and greater transparency and accountability.*

- *Develop a site investigation, assessment and monitoring procedure for use in FAA process*

- *Exemption granted under FAA on a site-specific basis, using the strengthened FAA protocol, where the site conditions and company capacity exist to adequately protect against the likelihood of public liability.*

In those circumstances where an appropriate bond is in place and the site risks are adequately identified, and deemed to be manageable by the purchasing company, the government and the public, there may be justification for indemnification of previous owners. This kind of measure could be applied through a strengthened FAA process that would include greater transparency, accountability and accessibility for all interested parties. In addition, a standardized technical mechanism for establishing due diligence reviews on behalf of government/public, similar in format to the AED Guidelines, should accompany the FAA transfer.

A more explicit, transparent method to assess the public risks and benefits of an indemnification proposal could benefit companies, shareholders, and the public. This approach provides an opportunity for assessing the state of risk for companies and the public before transferring liability between companies.

Industry notes that any application process and standardized due diligence framework would have to respect:

a) the concerns about disclosure of proprietary information between buyer and seller in a private transaction; and
b) the tight timelines that often govern these kinds of deals.

Administrative Issues and Operational Concerns

This list contains some of the issues that were identified as part of our deliberations that will need to be addressed in the development of solutions to the liability question. We see the resolution of these issues as a key part of action required by either the MEM or the MELP or bilateral agreements involving the two ministries and key stakeholders.

- Improve/strengthen/apply more consistently/clarify the bonding protocol under the WMA and Mines Act
- Develop criteria and parameters to improve the FAA process
- Develop monitoring and assessment parameters that will include clear technical requirements and public notification requirements
- Prepare a list of operational issues for regulators to consider including recommendations on the effective and efficient delineation of responsibilities and accountabilities for exploration, mine proposals, operations and closure of mines between MEM and MELP.
- Strengthen the RMDRC framework to facilitate the quality of assessments and information with the public.
- Lack of enforcement of the provisions under that legislation currently, and lack of remediation decisions that meet the needs/requirements of environmental protection for identified "valued" environmental components/receptors.
- Issues that will require more detailed discussion: definitions of appropriate bonding; site assessments; integrated site assessments.
- Inclusion of ENGOs in the more detailed discussions now occurring re admin and regulatory improvements.

APPENDIX - F

OPTIONS TO APPLY THE CONTAMINATED SITES REGULATION AT MINE SITES

A. Fully Operational Mine Sites

Option 1

Under WMA sec. 1(1) the Deputy Minister could limit the Regional Waste Manager's powers with regard to the application of contaminated sites legislation at mine sites in the annual "designation letter". This will require staff to undertake a detailed review of the manager's powers. Legal counsel would then review the powers selected for the manager to ensure there are no conflicts. The activities in the "Required Actions memorandum" would need to be completed in order to define the roles and responsibilities of staff from the two ministries with respect to regulation of mines.

For example under WMA 1(1) the manager's powers may be curtailed such that

For a mine with a valid *Mines Act* permit (possibly for specified mines) the manager may not exercise his powers under Part 4 of the *WMA* with regard to:

- ordering sites investigations
- issuing remediation orders

except where contamination is caused by petroleum hydrocarbons, explosives, reagents, concentrates, solvents, pesticides, PCBs, explosives or other chemicals generally associated with the maintenance, fuelling, laboratories, concentrators, and chemical storage facilities;

and/or

except where all or part of a mine is subject to a long-term lease of 30 years or more, or sold for another activity other than a mining activity

Pros:

- Would preserve the absolute, retroactive and joint and several liability provisions of the *WMA* for mine sites
- Would preserve the right of a director to exercise all the powers of a manager under Part 4 of the *WMA*.
- Would preserve MELP's role in dealing with the types of contamination in which MEM has limited experience

- Except for specific managerial powers, would allow for all of the provisions of the WMA to apply for all mine sites including those where the *Mines Act* bonding is inadequate, to address full reclamation/ remediation
- May lead to inconsistent application across the Regions.

Cons:

- Will likely not be well received by industry
- It is uncertain if all *Mines Act* permitted sites or only those of major companies with well bonded sites would be included. Inconsistent application of this option could be controversial. Could introduce political factors into a manager's decision.
- There may be some legal uncertainty in restricting the Regional Waste Manager's powers, however legal counsel has suggested that this is an option to consider.
- This would be administratively cumbersome and open to interpretation on the application of reduced powers on a mine site.
- The timing to undertake a detailed review of the manager's powers does not fit into the time frame set up by CSIC for a regulatory review of the CSR.
- Since restriction of the manager's powers would be done by the Minister through designation letters for managers the process would not be clear and transparent to third parties and the public.
- Other industries would likely want the manager's powers reduced at their sites also.
- Does not address the underlying industry concern of liability being tied to the tenure record
- May lead to a split in decision making between the Director and the Regional Waste Manager

•••

Option 2

A mine which is the subject of a *Mines Act* permit with the reclamation security as required by this permit is exempted by a regulation under section 57(3)(k) from all provisions of Part 4 of the Waste Management Act except for:

a) soil relocation agreements and the site registry
b) the remediation of petroleum hydrocarbons, explosives, acids, mineral concentrates, solvents, pesticides, PCBs, reagents, explosives, or other chemicals generally associated with maintenance, fueling, laboratories, concentrators, and chemical storage facilities,
c) all or part of a mine which is subject to a long-term lease (30 years) or sold for another activity other than a mining activity.

to options 1 and 2)

Cons:

- MEM staff will not accept these responsibilities.
- Does not address the regulatory duplication under the Mines Act and Waste Management Act, and perpetuates the dual process of reclamation/remediation of mines.
- Does not provide exclusive powers to MEM district inspectors and any delegation is subject to the written authority of the director of waste management.
- MOU cannot fetter with a Regional Waste Manager's legislated responsibilities and does not provide any certainty of process to the mining industry.
- Does not facilitate a better working relationship at the committee level

***

Option 4

Exempt all operating and closed mines with a section 10 *Mines Act* permit from all of the provisions of Part 4 (contaminated sites) and the retroactive ordering powers of the *Waste Management Act* under sections 31 and 33. Exemption would not apply to abandoned mines, closed mines which do not have a section 10 *Mines Act* permit, or to any part of a mine which is sold and used for another industrial activity other than mining.

Pros:

- Would retain MELP's ability to regulate and control effluent discharges from a mine site by maintaining their regulatory authority to issue effluent permits and to control and react to adverse environmental impacts related to the receiving environment through *WMA* sections 31 and 33 for current owners.
- Eliminates regulatory duplication between MEM and MELP at mine sites.
- Provides a strong signal and a high degree of certainty to the mining industry and business community that Government supports streamlining and eliminating unnecessary provincial legislation.

Cons:

- May be opposed by environmental organizations who could perceive the changes as a relaxation of pollution prevention and environmental protection standards and enforcement. (applies to other options as well)
- May be viewed by other industrial sectors as being unfair, however, the Business Council of British Columbia, who represent all industries, have recommended an exemption for mines from Part 4 of the *Waste Management Act*.

- May be used as a precedent by other industrial sectors to pressure government to relax the joint and several requirements of the *WMA* and CSR.
- If *Mines Act* bond is inadequate then residual liability transfers to the public.
- MEM would have to deal with contamination for which they have limited/no experience.

***

Option 5

Do not amend the contaminated sites provisions of the *Waste Management Act* or its regulations as they pertain to minesites. Perceived regulatory duplication would be addressed through by completion of the activities in the "Required Actions" memorandum.

Pros:

- Preserve the absolute, retroactive and joint and several liability provisions of the *WAM* for mine sites.
- Addresses key process problems within committees.

Cons:

- Does not address industry's liability concern with the transfer of properties.
- Continued uncertainty for mining companies with the regulation of minesites.
- May require considerable work and time to complete the "Required Actions" activities.
- Difficult to legally implement the "Required Actions" memorandum.

B. Exploration Mine Sites

The option that the CSIC Mining Subcommittee has developed is noted below. The subcommittee also recognizes that Options 1-5 detailed above for fully active mining sites could equally apply for exploration sites.

Mineral Exploration Sites – Exploration activities as defined under the Mineral Exploration Code (Part 11 of the Health, Safety and Reclamation Code for Mines in British Columbia) where there is less than a total of 1000 tonnes of bedrock excavated and are the subject of a Mines Act permit are exempt from

a) all provisions of Part 4 of the *Waste Management Act*
b) the retroactive liability provisions under s31 and s33 of the *Waste Management Act*

This does not apply to:

a) soil relocation agreements and the site registry

CSIC msc10.doc
March [illegible]

APPENDIX - G

Memorandum Of Understanding On Protocol For The Regulation And Administration Of Contaminated Sites

Between

The Ministry Of Environment, Lands And Parks

And

The Ministry Of Energy And mines

1.0 Purpose

This Agreement is to ensure that there is nonduplicative and efficient implementation and administration of contaminated sites legislation relating to the exploration and development of mineral, and petroleum, natural gas and geothermal resources. The Agreement addresses contaminated sites functions under the *Waste Management Act* (the *Act*), the Contaminated Sites Regulation (the regulation), the *Mines Act*, the *Petroleum and Natural Gas Act*, the *Pipeline Act*, and the *Geothermal Resources Act*

The Agreement defines the respective roles of

- the Ministry of Environment, Lands and Parks (hereinafter "Environment") and
- the Ministry of Energy and Mines (hereinafter "MEM").

2.0 Joint Responsibilities

2.1 Co-ordination and Communications

MEM and Environment recognize that clear communication is essential to the effective and efficient execution of this Agreement. Accordingly, MEM and Environment will consult regularly at senior and staff levels to ensure that

(a) the requirements of the *Mines Act* and the *Act* are considered when MEM and Environment are dealing with issues related to mining and mineral exploration, and

(b) the requirements of the *Petroleum and Natural Gas Act*, the *Pipeline Act*, the *Geothermal Resources Act* and the *Act* are all considered when MEM and Environment are dealing with issues relating to petroleum, natural gas and geothermal resource issues.

To enhance co-ordination and communications on contaminated sites issues, MEM and Environment will:

(c) establish an Interministry Contaminated Sites Co-ordination Committee to:

- foster communications between the two ministries;
- assess the implementation of the *Act* and Regulation;
- develop and implement policies and procedures to address sites related to mining, mineral exploration, petroleum, natural gas and geothermal resource issues;
- discuss training issues, and recommend actions to ensure appropriate training of staff and stakeholders;
- inform stakeholders of developments on relevant issues; and
- resolve any other issues arising related to this Agreement.

(d) encourage formal and informal communication among MEM and Environment staff involved with contaminated sites; and

(e) share information related to orphan sites and provide expertise as necessary to determine if remediation is required and how it is best carried out.

2.2 Training

2.2.1 Environment agrees to provide training support to MEM and its staff to assist MEM in obtaining and maintaining knowledge and skills for implementation of any regulatory functions it is delegated under this Agreement.

a) Where MEM staff are attending training sessions offered by Environment to industry or local government, MEM agrees to pay tuition and training material costs for their staff equivalent to that paid by industry or local government, and MEM will pay for all travel costs for their staff attending training sessions.

b) Where MEM requests Environment to provide a dedicated MEM training session, MEM agrees to pay for training materials and facilities, and Environment training staff travel expenses where the dedicated MEM training session is held outside of Victoria.

2.2.2 MEM agrees to maintain knowledge, skills and training of its staff to ensure competent delivery of any delegated authority under the *Act*. MEM staff who are not appropriately trained or who do not have appropriate skills and knowledge will not be delegated authority to carry out contaminated sites legislative functions under the *Act*.

2.3 Spill Reporting

MEM agrees to foster awareness in the mining and petroleum and natural gas sectors of the Spill Reporting Regulation under the *Waste Management Act*, including information on the need for reporting of salt-water spills both on and off of drilling sites.

2.4 Fees

MEM will recover fees for any functions delegated to MEM under subsection 3.2.2 of this agreement. Revenues from fees will be shared, as determined by Environment, between MEM and Environment for those tasks requiring involvement of both ministries. Fees payable for any other provisions in the Contaminated Sites Regulation will be recovered by Environment.

3.0 Mining

3.1 Mandatory responsibilities prescribed by the *Act* and the Contaminated Sites Regulation

MEM will:

(a) accept site profiles from owners pursuant to section 26.1 (4) of the *Act* and section 3 (5) of the regulation;

(b) assess and forward site profiles pursuant to section 26.1 (5) of the *Act* and section 6 (2) of the regulation, including forwarding site profiles to the site registrar; and

(c) notify a person providing a site profile, as prescribed in section 7 (3) of the regulation, whether a preliminary site investigation will be required.

3.2 Responsibilities delegated to MEM under section 28.3 of the *Act*

3.2.1 Pursuant to section 28.3 of the *Act*, for any site designated as a mine, abandoned mine or closed mine under the *Mines Act* and involving coal, metallic compounds or metals, a district inspector or designate may:

(a) order a person to prepare and provide a site profile pursuant to section 26.1 (9) of the *Act*, and

(b) order site investigations pursuant to section 26.2 (1) of the *Act* and section 58 of the regulation.

3.2.2 For sites designated as mines, abandoned mines or closed mines under the

Mines Act and involving coal, metallic compounds or metals, and pursuant to section 28.3 of the *Act*, upon written authority of the director of waste management, a district inspector or designate may:

(a) issue remediation orders in accordance with section 27.1 of the *Act*;

(b) with Environment as a co-signatory, enter into Voluntary Remediation Agreements in accordance with Section 27.4 of the *Act*;

(c) order responsible persons to initiate and conduct public consultations and reviews of remediation in accordance with section 27.5 of the *Act*;

(d) with Environment as a co-signatory, issue approvals in principle for remediation plans in accordance with section 27.6 of the *Act*, or

(e) with Environment as a co-signatory, enter into contaminated soil relocation agreements in accordance with section 28.1 of the *Act*.

3.2.3 A district inspector or designate carrying out a delegated function for a site under the *Act* will provide information for that site to the site registrar as prescribed in section 26.3 (2) of the *Act*.

3.2.4 For a specific site, Environment reserves the right, after consulting with MEM, to:

(a) order a site profile pursuant to section 26.1 (9) of the *Act*,

(b) order a preliminary site investigation pursuant to section 26.2 (1) of the *Act*,

(c) issue a remediation order pursuant to section 27.1 of the *Act*, or

(d) order a responsible person to instigate and conduct a public consultation and review of remediation in accordance with section 27.5 of the *Act*,

if Environment considers that there is a need for a site profile, preliminary site investigation, remediation or public consultation and review to be provided

3.3 Administrative responsibilities

MEM:

(a) will ensure that site profile information requirements are incorporated into

- i) the application for a permit under section 10 of the *Mines Act*, and
- ii) the notice of intention to stop work under the *Mines Act*,

(b) will notify the Environment manager responsible for the Environment region in which a particular site is located of the intent and action of MEM to do any of the following:

- i) issue a remediation order under the *Act* for that site,
- ii) order a responsible person to instigate and conduct public consultation and reviews of remediation under the *Act*;

under part 3.2.2 of this Agreement

(c) will notify the person required or ordered to provide a preliminary site investigation, of the requirement to submit a copy of the preliminary site investigation report for review by Environment together with a completed contaminated sites services application form and the applicable fee, to the Environment manager responsible for the Environment region in which the site investigated is located, at the same time the report is submitted to MEM;

(d) may, in consultation with Environment, develop and issue procedures for carrying out preliminary site investigations at mine sites; and

(e) may provide information on past and present mine sites in British Columbia in a form suitable for inclusion in the site registry, in accordance with section 26.3 of the *Act*.

3.4 For any specific site designated as a mine, abandoned mine or closed mine under the *Mines Act*, the district inspector or designate shall be provided an opportunity to review and comment on any determination of background levels of substances pursuant to sections 11 (3) and 17 (2) (b) of the Regulation

4.0 Petroleum and Natural Gas

4.1 Mandatory responsibilities prescribed by the *Act* and the Contaminated Sites Regulation

MEM will:

(a) accept site profiles from owners pursuant to section 26.1 (3) of the *Act* and section 3 (4) of the regulation;

(b) assess and forward site profiles pursuant to section 26.1 (5) of the *Act* and section 6 (2) of the regulation , including forwarding site profiles to the site registrar, and

(c) notify a person providing a site profile, as prescribed in section 7 (3) of the regulation, whether a preliminary site investigation will be required.

4.2 Responsibilities delegated to MEM under section 28.3 of the *Act*

4.2.1 Pursuant to section 28.3 of the *Act*, the division head or designate may:

(a) order a person to prepare and provide a site profile pursuant to section 26.1 (9) of the *Act*, and

(b) order a preliminary site investigation pursuant to section 26.2 (1) of the *Act* and section 58 of the regulation.

4.2.2 For a specific site, Environment reserves the right, after consulting with MEM, to:

a) order a site profile pursuant to section 26.1 (9) of the *Act*, or

b) order a preliminary site investigation pursuant to section 26.2 (1) of the *Act* ,

if Environment considers that there is a need for a site profile or preliminary site investigation to be provided.

4.3 Administrative responsibilities

MEM

(a) will ensure that site profile information requirements are incorporated in the application form for a Certificate of Restoration under section 84 of the *Petroleum and Natural Gas Act*;

(b) will notify the person required or ordered to provide a preliminary site investigation, of the requirement to submit the preliminary site investigation report for review by Environment together with a completed contaminated sites services application form and the applicable fee, to the Environment manager responsible for the Environment region in which the site investigated is located;

(c) may, in consultation with Environment, develop and issue procedures for carrying out preliminary site investigations at petroleum and natural gas exploration and production sites; and

(d) may provide information on petroleum and natural gas exploration and production sites in British Columbia in a form suitable for inclusion in the site registry, in accordance with section 26.3 of the *Act*.

5.0 Limits to this Agreement

Nothing contained in this Agreement limits or abrogates the responsibilities or duties assigned to individual ministries under provincial legislation. This agreement may be reviewed or cancelled at any time by either party.

Date

Deputy Minister
Ministry of Energy and Mines

Date

Deputy Minister
Ministry of Environment, Lands and Parks

APPENDIX - H

REQUIRED ACTIONS TO IMPROVE THE REGULATORY WORKING RELATIONSHIP AT MINE SITES

The Ministry of Environment and the Ministry of Energy & Mines shall undertake to complete the following as necessary and then agree to jointly regulate minesites per the following terms and conditions:

1. Dispute Resolution Mechanism – In order to resolve future concerns a dispute resolution mechanism is established whereby any operational issues not resolved at a staff level will be progressively elevated through the following stages until agreement is attained.

Stage 1 – Regional Waste Manager & the Regional Mines Inspector

Stage 2 – Chief Inspector of Mines & the Director of Pollution Prevention and Remediation

Stage 3 – Assistant Deputy Ministers for the Ministry of Environment, Lands and Parks & the Ministry of Energy and Mines

2. Regional Mine Development Review Committees – The Ministry of Environment, Lands and Parks & the Ministry of Energy and Mines shall agree to Terms of Reference for the Regional Mine Development Review Committees.

3. Mine Site Risk Assessment – The Ministry of Environment, Lands and Parks & the Ministry of Energy and Mines shall consult with both industry and public groups to develop and implement a standardized risk assessment process specific for mine sites. This process is to form the basis of the mine site's closure plan environmental assessment.

4. Security/bonding Protocol – A security/bonding protocol for minesite remediation/reclamation agreed to by both the Ministry of Environment, Lands and Parks & the Ministry of Energy and Mines will address liabilities under both the *Waste Management Act* and *Mines Act*.

5. Closure Plan Signoff – A Closure Plan is in effect only when both the Ministry of Environment, Lands and Parks & the Ministry of Energy and Mines are in agreement and have issued their permits.

6. Responsibility Matrix – Regulatory work at mine sites is to be managed using the responsibility matrix within resource constraints of the two ministries.

7. Reclamation Advisory Committee - The Ministry of Environment, Lands and Parks & the Ministry of Energy and Mines shall agree to Terms of Reference for the Reclamation Advisory Committee.

8. Site Registry – Mine sites will not be included in the Ministry of Environment, Lands and Parks' site registry unless an activity under the Contaminated Sites Regulation has been conducted.

Requirements to facilitate the MOU:

1. Terms of reference for both the Regional Mine Development Review Committee and the Reclamation Advisory Committee shall be agreed to by both ministries by September 2000.

→ Products: a) Regional Mine Development Review Committee Terms of Reference

b) Reclamation Advisory Committee Terms of Reference

2. The two ministries, in consultation with industry and environmental groups, shall develop mine site specific risk assessment guidance by April 2001.

→ Product: Mine Site Specific Risk Assessment Guidance

3. By September 2000 the two ministries will have reviewed the current bonding protocol and recommend any changes as necessary to ensure that both ministries have access to funds required for mine site remediation/ reclamation.

→ Product: Current bonding protocol reviewed and updated as may be required.

4. By September 2000 the two ministries shall have agreed to the working closure/remedial plan content which will be finalized by June 2001 following completion of the risk assessment guidance. This shall designate ministry signing authority for relevant sections.

→ Product: Detailed closure/remedial plan content guidance.

5. By November 2001 the two ministries shall have reviewed and acknowledged all existing protocol agreements and agreed to a work responsibility matrix.

→ Product: Work responsibility matrix with associated protocol agreements.

APPENDIX - I

3. MINING ACTIVITIES COVERED

All activities associated with exploration, development, extraction, processing, reclamation, closure and long-term inspection and monitoring of mining operations are included in this agreement.

Mining operations are "mines" as defined in the Mines Act and include all areas where mechanical disturbance of the ground or any excavation is made to explore for or to produce coal, mineral-bearing substances, placer minerals, rock, limestone, earth, clay, sand, or gravel.

4. ROLES

Mines will act as the lead agency and the "one-window" for all mining related activity requiring the posting of security.

Mines is responsible for regulating the mining industry under provisions of the Mines Act. All companies or individuals carrying out mining and exploration activity must receive prior approval and must be issued a reclamation permit. To develop and operate a mine, all companies must first obtain a Mine Development Certificate.

Environment is responsible for protecting the quality of the air, land and water through the Waste Management Act, regulating the diversion and use of water through the Water Act, and the protection of wildlife resources under provisions of the Wildlife Act. By agreement with the Federal government, Environment also plays a role in the safeguarding of fish habitat through the maintenance of required stream flows, protection of water quality, preservation of riparian vegetation and spawning/rearing habitat. Environment will ensure that any impacts on these resources are fully addressed through mitigation and reclamation.

5. GUIDING PRINCIPLES

Staff of Mines and Environment will cooperate to regulate the mining industry and protect the Province's natural resources in a fair and consistent manner.

6. REFERRAL AND APPROVAL OF APPLICATIONS UNDER THE MINES ACT

a) Sand and Gravel Pits (including earth and clay), Quarries (including rock and limestone), Placer Mining, and Coal and Mineral Exploration

o Mines will issue reclamation permits for work proposed on coal, mineral or placer properties, sand and gravel pits, quarries and mineral exploration.

- Access roads which are constructed off mineral claims or leases, will usually be regulated solely by the Ministry of Forests.

- Mines will refer all applications for Mines Act approvals to Environment for a 30 day review by Regional offices unless separate procedures have been agreed to by Regional staff. Annual program approvals or standard placer permit provisions may not require full review.

- In responding to the referred applications, Environment will outline any specific issues and bonding requirements to be incorporated into the Reclamation Permit.

- Where a Regional Director for Environment has indicated specific issues or a bonding requirement, and Mines is in agreement with the wording of these recommendations, a copy of the final Permit will be forwarded to the Regional Director.

- Where a Regional Director for Environment has indicated specific issues or a bonding requirement in which Mines is not in agreement, then the District Inspector and Regional Director (or designate) must meet to resolve the issue.

- By mutual agreement of the District Inspector and Regional Director, the Regional Mine Development Review Committee can be used as a forum to discuss reclamation security requirements or annually review security levels.

- Where Environment requires a security involving a mining project as defined in Section 3 of this agreement, the conditions of the requirement shall be referred to the Chief Inspector or designate.

- All mining companies will be required to post a reclamation security reflecting costs of environmental protection and reclamation obligations before a Reclamation Permit is issued and work is authorized to proceed.

b) Major Mine Developments

- Bonding requirements will be addressed at each stage of the Mine Development Review Process.

- Mines will require all mining companies provide an estimate of all costs as outlined in Section 8 below as part of the Mine Development Review Process. Costs will not normally be required during the Prospectus stage.

- The Regional Mine Development Review Committee will undertake a detailed technical review of all costs and requirements as specified in Section 8 below.

- Following technical review by the Regional Mine Development Review Committee, draft Reclamation Permits will be forwarded to the Reclamation Advisory Committee for approval prior to being finalized.

- The Reclamation Advisory Committee is responsible for ensuring that bonding is adequate to cover the short and long term needs of both agencies. It is the responsibility of Mines' and Environment's representatives on this Committee to ensure the recommendation of the Regional Mine Development Review Committee has been incorporated into the final draft permit.

- Where Environment requires a security involving a mining project as defined in Section 3 of this agreement, the conditions of the requirement shall be referred to the Regional Mine Development Review Committee.

7. SECURITY DEPOSITS

Mines will collect and administer a single security deposit to cover the needs of both Ministries in accordance with the Finance and Administration Act and the Bonding Act.

Mines will issue Reclamation Permits which cross reference all approvals, permits, licences or requirements issued by Environment which require a security.

8. SECURITY COVERAGE

Mines and Environment will establish a formula and mechanism for estimating the amount of bonding required. All securities can be applied to requirements of both agencies including all costs associated with:

- reclamation of all disturbances to the land and watercourses during any mining activity including sand, gravel, earth, and clay extraction and processing, quarrying (including rock and limestone), placer mining, coal and mineral exploration and major mine developments,

- reclamation of all tailings ponds and mitigation of short and long-term impacts associated with the operation and closure of tailings ponds,

- reclamation of all water-retaining structures, including those containing permanently inundated acid generating material, and mitigation of short and long-term impacts associated with operations and closure of such structures,

- reclamation of water-carrying and diversion structures, including rock drains, and mitigation of short and long-term impacts associated with the operation and closure of such structures,

- reclamation of all waste rock and coarse coal reject dumps including mitigation of short and long-term impacts of waste dump failures,
- short and long-term collection and treatment of contaminated mine drainage, and
- surveillance, site inspection, maintenance of facilities and monitoring requirements.

9. PERMIT CONDITIONS

The following condition will be added to all Reclamation Permits:

> The owner, agent, or manager shall conform to all Ministry of Environment approval, licence and permit conditions as well as requirements under the Wildlife Act. Should the owner, agent, or manager not conform to these conditions then all or part of the security may be used to fulfill these requirements.

Where security involving a mining project as defined in Section 3 of this agreement is required under the Water Management Act, Waste Managements Act or Wildlife Act, the approval, permit or notice of requirement should refer to the Reclamation Permit with the following (or similar) wording:

> The licensee/permittee shall maintain security with the Minister of Finance and Corporate Relations, as a condition of the Reclamation Permit issued by the Ministry of Energy, Mines and Petroleum Resources.

10. REFERRAL AT CLOSURE

Where a security applies to Environment statutory requirements, Mines will refer applications for Reclamation Permit closure to Environment and will ensure that Environment's interests have been met prior to release of security. It is understood that the security may be required to be maintained for many years following closure.

11. CONFISCATION OF SECURITY

Where a permittee, or licensee fails to comply with the conditions of the Reclamation Permit or conditions of an Environment approval, licence, permit, or requirement, the Chief Inspector, after giving notice to remedy the failure will confiscate the security.

Upon receipt of the confiscated security, Mines and Environment will, through the Regional Mine Development Review Committee, meet to schedule and prioritize reclamation activities.

Mines will arrange for contractors to undertake remedial work.

12. DISPUTE RESOLUTION

Any disputes involving the application of this bonding agreement which cannot be resolved by the Regional Mine Development Review Committee or the Reclamation Advisory Committee, will be raised to the Assistant Deputy Minister level for resolution.

13. LIMITS TO THIS AGREEMENT

Nothing contained in this agreement limits or abrogates the responsibilities or duties assigned to individual Ministries under Ministry acts and statutes.

This agreement may be reviewed or cancelled at any time by either party.

Deputy Minister Ministry of Energy, Mines and Petroleum Resources	Deputy Minister Ministry of Environment
Aug 22/91 Date	July 10, 1991 Date

APPENDIX - J

List of Coal, Metal, Major Sand and Gravel Operations and Quarries in British Columbia (includes operating, closed and some historic sites)

Permit No.	Mine Name	Company/Owner	
Coal Mining			
C-002	Elkview Mine	Elkview Coal Corp	
C-003	Fording River Operations	Fording Coal Ltd.	
C-015		Forestburg Collieries - Tellkwa	
C-038		Hudson Bay Mining and Smelting	
C-040		Hudson Bay Mining and Smelting	
C-047		Brameda Resources Ltd. - Sukunka R.	
C-048		Teck Corp. - Bullmoose Proj.	
C-049	Eco (exploration)	Fording Coal Ltd.	
C-051		Master Expl. Ltd. Alfa Coal Ltd.	
C-052		[illegible] Joint Venture - Hogan Mines Ltd	
C-053		Rio Tinto Canadian Expl. - Upper Elk Valley	
C-054		Crows Nest Industries Ltd.	
C-056	Quintette Coal	Quintette Coal Ltd.	
C-057		Saxon Coal Ltd.	
C-058		[illegible] Coal - Amax Coal Co. Inc.	
C-059	Peace River Cannel	Cinnabar Peak Mines	
C-070	Sage Creek	Rio Tinto Canadian Expl. Ltd.	
C-078		Bethlehem Copper Ltd. - Princeton	
C-079		Bethlehem Copper Ltd. - Bowron River Coal	
C-080		Westar Mining	
C-083		Utah Mines Ltd. - Mount Gething	
C-084	Coal Mountain	Fording Coal Ltd.	
C-087	Monkman	Petro Canada Explorations Inc.	
C-102		Fording Coal Ltd. - Henretta Ridge, K pit	
C-103	Hat Creek Coal, Cache Cr.	B.C. Hydro - Exploration	
C-105		B.C. Hydro - Suquash Drilling Project	
C-107		Norcen Energy Resources Ltd. - Pine Pass	
C-108	Chinook Coals Ltd.	Manalta (settling pond)	
C-110		Luscar Ltd. - Quinsam Coal Ltd.	
C-111		Utah Mines Ltd. - Dowling Creek	
C-113		McIntyre Porcupine Mines Ltd. - Fate Mtn	
C-115		Cyprus Anvil Mining Corp. - Tuberose	
C-116		Teck Corporation Ltd.	
C-117		B.P. Explorations Canada Ltd.	
C-118		Ranger Oil Ltd.	
C-119		Denison Mines Ltd.	
C-120		Shell Canada Resources	
C-121		Denison Mines Ltd. - Hermington	
C-122		Denison Mines Ltd. - Hudson and Pine Blocks	
C-123		Cyprus Anvil Mining Corp. - Tellkwa	
C-124		B.P. Explorations Canada Ltd.	
C-125		Gulf Canada Resources Ltd.	
C-126		Northern Energy Res. - Groundhog Proj.	
C-129	Line Creek	Line Creek Resources Ltd/Manalta	
C-130		Esso Mining Ltd.	
C-131		Hudbay Coal Co. - Ash River Proj.	
C-132		Netherlands Pacific Mining Co. Ltd.	
C-134		Ranger Oil Ltd. - Mount Spieker (Proj)	
C-135		Norco Resources Ltd. - Bowron R. (Expl)	
C-136		Norco Resources Ltd. - Bowron R. (prod)	
C-137	Greenhills Operation	Fording Coal Ltd.	
C-142		Rem Ventures Corp. - Suquash Property	
C-143		Westland Resources Ltd	
C-144		Gulf Canada Resources Inc.	
C-151		Shell Canada - Crows Nest Industries	
C-153	Willow Cr.	David Minerals Ltd.	
C-154		Shell Canada Resources Ltd.	
C-156	Quintette Coal	Quintette Operating Corporation	
C-157		Utah Mines Ltd. - Gingey Creek	
C-158	Bullmoose Operating Corp.	Teck Corp	
C-160		Gulf Canada Resources Corp.	

List of Coal, Metal, Major Sand and Gravel Operations and Quarries in British Columbia (Includes operating, closed and some historic sites)

C-1[illegible]	Nuspar	Nuspar Resources	
C-1[illegible]		Canadian Occidental Petr. - Ash River	
C-1[illegible]		Countryside Coal Processing Ltd.	
C-1[illegible]		McBean, T.D. - [illegible] Coal Mining	
C-1[illegible]		Esso Canada Res. Ltd. - [illegible]	
C-172	Quinsam Coal Mine	Quinsam Coal Corporation	
C-17[illegible]		Esso Canada Res. Ltd. - Quatsino Sound	
C-182		Canadian Occidental Petroleum Ltd.	
C-18[illegible]	Canadian Occidental	Canadian Coal Co.	
C-210	McGillivray	McGillivray Mining	
Metal Mines.			
M-001	Tasu	Falconbridge Limited	Permit closed
M-004	Endako	Placer Development Ltd.	
M-005	Pinchi Lake	Cominco Ltd.	
M-006	Granisle	Noranda Mines Ltd.	
M-007		Noranda Mines Ltd. - Phoenix Granby	Permit closed
M-008	Red Mountain	International Nickel Co.	
M-009	Island Copper Mine	BHP Minerals Canada	
M-010	Kitsault Mine	Amax of Canada Ltd.	
M-011	Highland Valley Copper	Highland Valley Copper	
M-013	Brenda	Brenda Mines	
M-016	Cassiar Asbestos	Cassiar Resources Ltd.	
M-0[illegible]		G.M. Resources Ltd. - Greyhound Mines	Permit closed
M-026	Myra Falls	Westmin Resources	
M-027		Lornex Mining Corp. - Highland Valley	Permit closed
M-029	Similco	Similco Resources	
M-033	Bull River	Stanfield R.H.	
M-036	Bell Copper	Noranda Mines Ltd.	
M-037		Cominco Copper Div. - Valley Copper Mines Ltd	Permit closed
M-040	Gibraltar	Placer Development	
M-041		Mustang Resources Ltd.	Permit closed
M-042		[illegible] Development - Lucky Tough Mine	Permit closed
M-046		Columbia Metals Corp. True Fissure	Permit closed
M-050	Alvin Mine	Delaro Mining Corp.	
M-055	Highland Valley Copper	Highmont	
M-051	Britannia	Anaconda Britannia Mines	Permit closed
M-052		Churchill Copper Corp.	Permit closed
M-0[illegible]		Cominco Ltd. - Benson Lake	Permit closed
M-054	Giant Mascot/Giant Nickel	Homestake Canada Inc.	
M-055	[illegible] Mine	Treminco Resources	
M-056		Ideal Cement Co. Ltd.	
M-057		Placer Dev. - Can. Expl. Ltd. - Canex Tungsten	Permit closed
M-0[illegible]	Craigmont Mines	Yorkshire Resources Ltd.	
M-059		Reeves MacDonald Mines Ltd.	Permit closed
M-070	Dolly Varden	Dolly Varden Mines Ltd.	
M-071		Teck Corp. - Beaverdell	
M-072		KRC Operators	
M-073	Granduc	Granduc Operating Co.	Permit closed
M-074	Sullivan Mine & Kimberley	Cominco Ltd.	
M-077		Cominco Ltd. - Bluebell Mine	Permit closed
M-081		[illegible] Can-Fer Resources Ltd. - [illegible]	Permit closed
M-0[illegible]	H.B. Mine	Nowdsen Res. Inc.	
M-0[illegible]		Jordan River Mines Ltd.	Permit closed
M-0[illegible]		B.C. Rossland Mining School	
M-0[illegible]	Ruth Vermont	Centapede Resources	
M-0[illegible]	Anyox	Colby Mines Ltd.	Permit closed
M-0[illegible]		Coast Copper	Permit closed
M-0[illegible]		Leemac Mines Ltd. - Trojan Mines	Permit closed
M-0[illegible]		Can. Reserve Oil & Gas Ltd. - [illegible]	Permit closed
M-095	Dankoe	Dankoe Mines Ltd.	
M-0[illegible]		Quadra Bell Mining Co. Ltd	Permit closed
M-0[illegible]		Dusty Mac Mines Ltd. - Copper Mountain Mine Ltd.	Permit closed
M-101	Boss Mountain	MacLaren Forest Products Inc.	
M-104		Colt Resources Ltd.	Permit closed

List of Coal, Metal, Major Sand and Gravel Operations and Quarries in British Columbia (includes operating, closed and some historic sites)

M-105		Norbelt Mines Ltd.	Permit closed
M-113	Afton Ajax	Afton Operating Corp.	
M-114	Equity Silver Mine	Equity Silver Mines Ltd.	
M-127	Table Mountain	Cusac Industries Ltd.	
M-128		Antimony Mountain Mine - Sam/Ken Morris	Permit closed
M-130	Mosquito Creek Gold	Wellburn Gold Project	
M-136	Carolin Mine	Carolin Mines Ltd.	
M-139	Summit Gold	Teeshin Resources Corp.	
M-140	Baker mine	DuPont Canada Ltd.	
M-141		Canada Wide Mines Ltd.	Permit closed
M-146		Placer Mining Corp. - Vollaug Mine	
M-147	Goldstream	Bethlehem Resources Corp.	
M-148	Venus Mine	United Keno Mines Ltd.	
M-149	Taurus Mine	Taurus Resources Ltd.	
M-150	Dimac	Dimac Resources Corp.	
M-152	Baymag	Baymag Mines Ltd.	
M-155	Ashlu Gold	Osprey Mining and Expl. Ltd.	
M-161	Bolivar Project	Rhyolite Resources Inc.	
M-162	Domtar Gypsum	Domtar Inc.	
M-164	Aurun Mine	Aurun Mines Ltd. Pacific Perlite Div.	
M-167		Heines Gypsum Inc.	Permit closed
M-170	Union Mine	Pearl Resources Ltd.	
M-171	Blackdome	Claimstaker Resources	
M-173	Nickel Plate	Homestake Canada Inc.	
M-174	Lawyers	Cheni Gold Mines Ltd.	
M-177	Skylark	Skylark Resources Ltd.	
M-178	Johnny Mountain	Skyline Gold Corp.	
M-179	Premier Gold Project	Westmin Resources Ltd.	
M-180	Parson Barite Mine	Mountain Minerals Co. Ltd.	
M-181	Moberley Silica	Mountain Minerals Co. Ltd.	
M-183	Hedley Leach Gold Tailings	Candorado Operating Co. Ltd.	
M-184	Samatosum	Inmet Mining Inc.	
M-185	South Fork Silica	531679 B.C. Inc.	
M-186	Hagen Mtn.	Michael Resources Ltd.	
M-187	Golden Bear/Muddy Lake	Golden Bear Operating Corp. Ltd.	
M-188	Horse Creek silica	Nugget Contracting ltd.	
M-189	Multinational B	Int. Shasta Res. Ltd. & Sable Res. Ltd.	
M-190	SNIP Project	Cominco Metals	
M-191	Sulphurets	Newhawk Gold Mines Ltd.	
M-192	Clayburn	Clayburn Industries Ltd.	
M-193	Stronsay Project - Cirque	Curragh Resources Inc	
M-194		Timmins Nickel Inc.	Permit closed
M-196	Pacific Silica	Pacific Silica Ltd.	
M-197	Eskay Creek	Prime Resources	
M-198	QR Gold	Kinross Gold Corp	
M-199	Elk Property	Fairfield Minerals Ltd	
M-200	Mount Polley	[illegible] Resources	
M-202	Huckleberry	New Canamin	
M-204		Pacific Vangold	Permit closed
M-205	Nazko Quarry	Canada Pumice Corp.	
M-206	Kemess South	Royal Oak Res.	
M-207	Bralorne	Bralorne Gold - Bralorne-Pioneer Gold	
M-208	Lillington	Britannia Gold / Bren Mar Res.	Permit closed
M-209	Roberts Mill	Bow Mines.	
Major Gravel Operations			
G-008	Producer's Pit	Construction Aggregates Ltd	
G-007-17		Stratton quarry	
G-007-2		Allard Construction	
G-007-22		Allard Construction	
G-007-3		Allard Construction	
G-007-33		Jack Cewe Ltd.	
G-007-46	Sechelt Pit	Construction Aggregates Ltd	
G-007-50		Allard Construction	
G-007-7		Jack Cewe Ltd.	

List of Coal, Metal, Major Sand and Gravel Operations and Quarries in British Columbia (includes operating, closed and some historic sites)

G-035		Pacific Rim Aggregates	
Quarries			
Q-032	Silica Quarry	Canada Cement Lafarge Ltd.	
Q-004-1	Falkland Quarry		
Q-007-17	Sumas Shale Ltd		
Q-008-13	Blubber Bay Quarry		
Q-014	Veranda		
Q-015		[illegible] Marble Ltd.	
Q-016		Imperial Limestone Co. Ltd.	
Q-019	Giant mascot Mine	Baroid Petroleum Services	
Q-020	Westroc Industries	Western Gypsum	
Q-026	Kamloops Quarry	Canada Cement Lafarge Ltd.	
Q-030		Crownite Industrial Minerals Ltd.	
Q-052	Harper Limestone		
Q-058	Imasco Minerals Ltd	International Marble and Stone Co.	
Q-066		Ideal Cement Co. Ltd.	
Q-071	Beaverdell	Teck Corp.	
Q-082	Winlaw Silica Quarry	Trans Gulf Resources	
Q-100	Mineral King Project	Purcell Development Co. Ltd.	
Q-101	Snowshoe	FJN Explorations	
Q-102	Pitquah Quarry	Canadian National Railway	
Q-104	Lion Creek Dyke	Canadian National Railway	
Q-105	[illegible], J		
Q-106	L. [illegible]	Northland Explorations	
Q-107	Nass River Quarry	Sunshine Valley Minerals Inc.	
Q-112	[illegible] Project	Knight Inlet Resources Ltd.	
Q-113		Genstar Ltd.	
Q-115		Canadian Cellulose Co. Ltd.	
Q-116	Taylor B.C.	[illegible] Enterprises	
Q-196	Swansea Ridge	Canadian Pacific Railway	
Q-201	Too Easy	Heriot Bay Res. Ltd.	
Q-202	Mt. Meager	Great Pacific Pumice Inc.	
Q-205	Nazko Cinder Cone	Canadian Pumice Corp.	
Historic (never permitted) or Significant Exploration Properties (not complete list)			
	Silver Standard		
	Drillpile		
	Fish Lake		
MX-1-273	Kutcho Creek		
	Mount Milligan	Placer Dome	
	Red Chris		
	Telkwa Coal	Manalta Coal Ltd.	
	Crystal Peak		
	Bronson Slopes		
	Cinola	Royal Oak Resources	
	Dome Mountain		
	Porcher Island	Westmin Resources	
MX-1-422	Red Mountain	Royal Oak Resources	
	SB Silver Butte		
	Tulsequah	Redfern Resources	
	[illegible]	CPR Quarry	
	Mount Washington		
MX-1-110	Windy Craggy	Royal Oak Resources	
TOTALS			

APPENDIX - K

June 23, 2000

Mine Sites Listed in the Site Registry[1]

Site ID	Common Name	City	Ministry Region	Status Code	Number of Notations[2]
126	Sumac Ventures Heap Leach Site	Grand Forks	Penticton, Southern Interior	Active – Remediation Complete	9
296	Homestake Nickel Plate Mine – Hedley	Hedley	Penticton, Southern Interior	Active – Under Remediation	73
358	Tulsequah Chief Mine	Atlin	Smithers, Skeena	Active – Under Assessment	20
436	Britannia Mine Site	Britannia Beach	Surrey, Lower Mainland	Active – Assessment Complete	10
1730	Former Mine and Smelter at Crofton	Crofton	Nanaimo, Vancouver Island	Active – Under Remediation	7
2092	Second Relief Mine (Erie Creek – Salmo)	Salmo	Nelson, Kootenay	Active – Under Remediation	12
2239	Motherlode Mine	Greenwood	Penticton, Southern Interior	Inactive – Remediation Complete	6
2260	Tonto Mining/DIAND	Kamloops	Federal Pacific Yukon Region	Active – Under Assessment	3
2620	Brenda Mines Limited	Peachland	Penticton, Southern Interior	Active – Remediation Complete	12
2689	Teddy Glacier Mine Site	Revelstoke	Nelson, Kootenay	Active – Under Assessment	2
2834	Cominco Lower Mine Yard	Kimberley	Cranbrook, Kootenay	Active – Under Assessment	9
2876	Equity Silver Mines – Knockholt Site	Houston	Smithers, Skeena	Inactive – Remediation Complete	5
2913	Taurus Mine	Cassiar	Smithers, Skeena	Inactive – No Further Action	4
2933	Cassiar Mine	Cassiar	Smithers, Skeena	Inactive – No Further Action	10
2971	Duthie Mine Tailings	Smithers	Smithers, Skeena	Active – Under Assessment	3
3140	Beaverdell Mine Site	Beaverdell	Penticton, Southern Interior	Inactive – No Further Action	7

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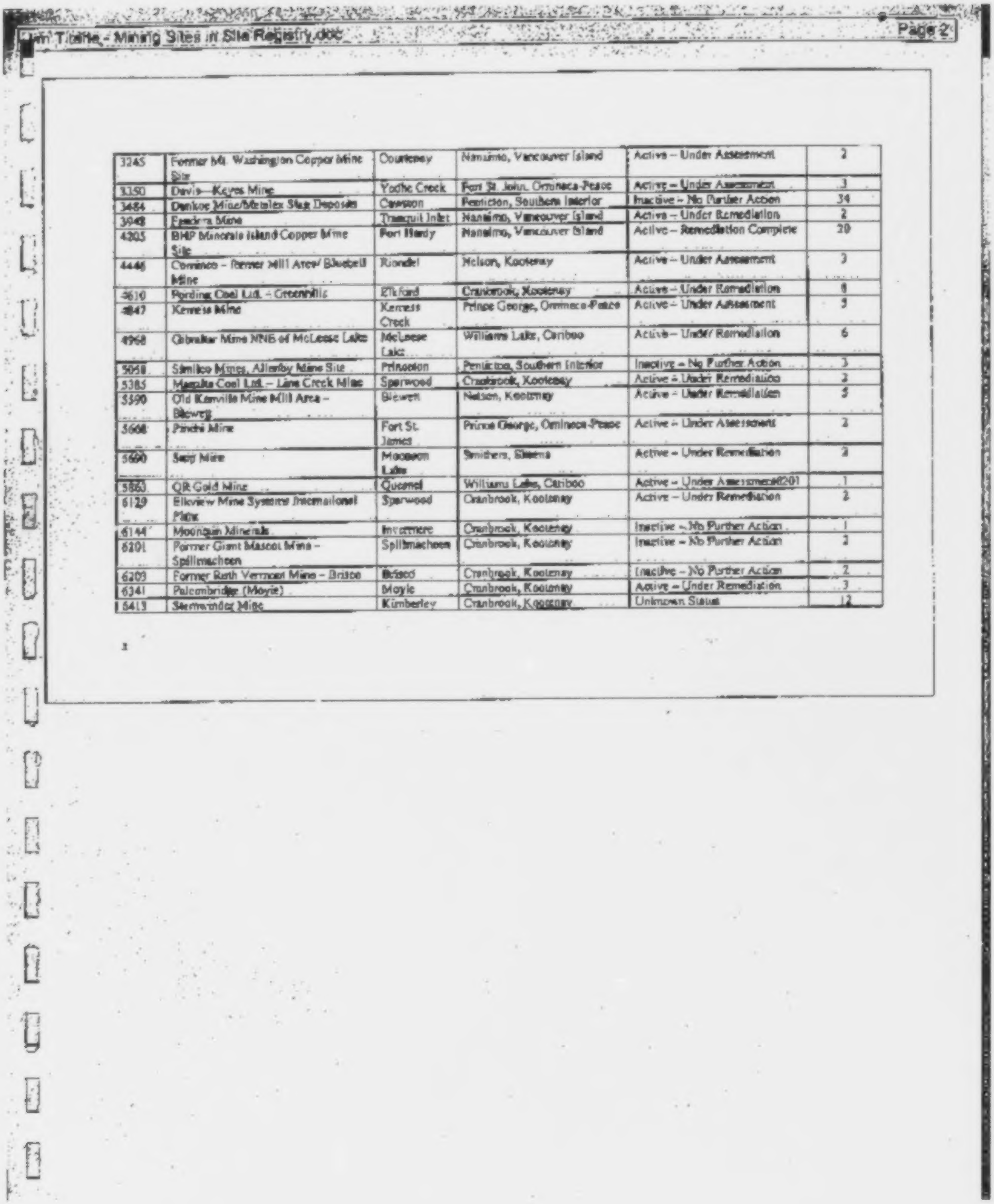
[1] Gravel pits and exploration sites are not included.

[2] A notation is an entry in the Site Registry that reports, summarizes or comments on a matter relating to a site, including partial or complete correspondence, reports, plans, notes, and entries for events.



Jim Titahe - Mining Sites in Site Registry.doc

3245	Former Mt. Washington Copper Mine Site	Courtenay	Nanaimo, Vancouver Island	Active – Under Assessment	2
3350	Davis—Keays Mine	Yodhe Creek	Fort St. John, Omineca-Peace	Active – Under Assessment	3
3484	Dankoe Mine/Metalex Slag Deposits	Cawston	Penticton, Southern Interior	Inactive – No Further Action	34
3948	Fandora Mine	Tranquil Inlet	Nanaimo, Vancouver Island	Active – Under Remediation	2
4205	BHP Minerals Island Copper Mine Site	Port Hardy	Nanaimo, Vancouver Island	Active – Remediation Complete	20
4446	Cominco – former Mill Area/ Bluebell Mine	Riondel	Nelson, Kootenay	Active – Under Assessment	3
4610	Fording Coal Ltd. – Greenhills	Elkford	Cranbrook, Kootenay	Active – Under Remediation	8
4847	Kemess Mine	Kemess Creek	Prince George, Omineca-Peace	Active – Under Assessment	5
4968	Gibraltar Mine NNE of McLeese Lake	McLeese Lake	Williams Lake, Cariboo	Active – Under/ Remediation	6
5058	Similco Mines, Allenby Mine Site	Princeton	Penticton, Southern Interior	Inactive – No Further Action	3
5385	Manalta Coal Ltd. – Line Creek Mine	Sparwood	Cranbrook, Kootenay	Active – Under Remediation	3
5390	Old Kenville Mine Mill Area – Blewett	Blewett	Nelson, Kootenay	Active – Under Remediation	5
5608	Pinchi Mine	Fort St. James	Prince George, Omineca-Peace	Active – Under Assessment	2
5690	Sapp Mine	Mooseon Lake	Smithers, Skeena	Active – Under Remediation	2
5863	QR Gold Mine	Quesnel	Williams Lake, Cariboo	Active – Under Assessment6201	1
6129	Elkview Mine Systems International Plant	Sparwood	Cranbrook, Kootenay	Active – Under Remediation	2
6144	Mountain Minerals	Invermere	Cranbrook, Kootenay	Inactive – No Further Action	1
6201	Former Giant Mascot Mine – Spillimacheen	Spillimacheen	Cranbrook, Kootenay	Inactive – No Further Action	2
6203	Former Ruth Vermont Mine – Brisco	Brisco	Cranbrook, Kootenay	Inactive – No Further Action	2
6341	Falconbridge (Moyie)	Moyie	Cranbrook, Kootenay	Active – Under Remediation	3
6413	Stemwinder Mine	Kimberley	Cranbrook, Kootenay	Unknown Status	12

6571	Cominco Lower Mine – Subdivision Portion	Kimberley	Cranbrook, Kootenay	Active – Under Assessment	2
6588	St. Eugene Mine	Moyie	Cranbrook, Kootenay	Unknown Status	1